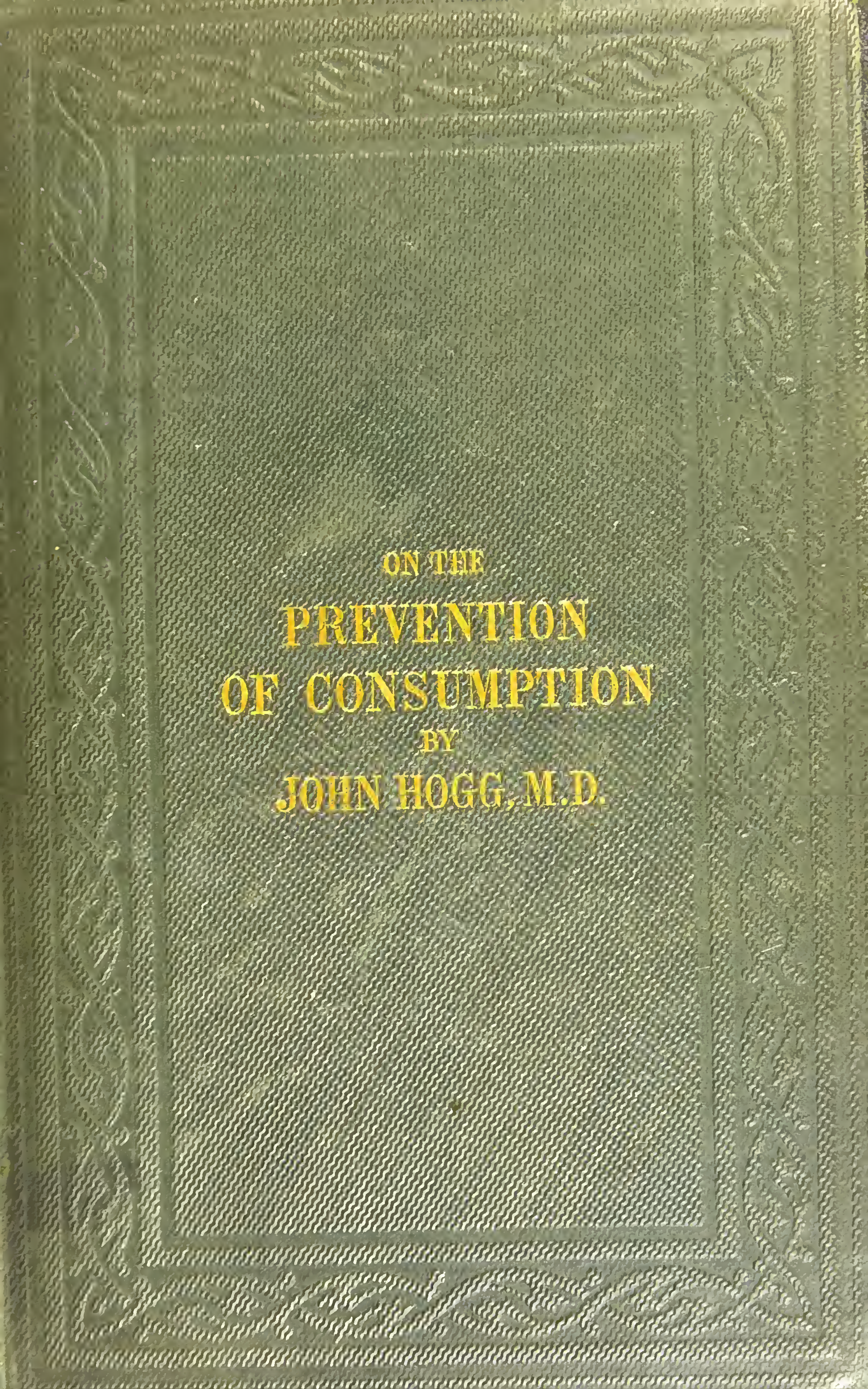

ON THE
PREVENTION OF CONSUMPTION
BY
JOHN HOGG, M.D.

THE ROYAL SOCIETY
FOR THE PROMOTION
OF HEALTH
Founded 1876

LIBRARY REGULATIONS

(a) Books, periodicals and pamphlets may be borrowed by Fellows, Ordinary Members, Associates and Affiliates personally or by a messenger producing a written order. The person to whom such publications are delivered shall sign a receipt for them in a book provided for that purpose.

(b) Publications may be borrowed through the post, or by other means of carriage, upon a written order. The postage or carriage of publications returned to the Society shall be defrayed by the borrower.

(c) A borrower may not have more than three publications in his possession at one time.

(d) A borrower will be considered liable for the value of any publication lost or damaged while on loan to him, and, if it be a single volume or part of a set, for the value of the whole work thereby rendered imperfect. Marking or writing in the publications is not permitted, and borrowers are requested to call attention to damage of this character.

(e) Books and pamphlets may be retained for twenty-eight days. Periodicals may be retained for fourteen days. Applications for extension of the loan period must be made in writing before its expiry. No publication may be kept longer than three months.

(f) Books and pamphlets added to the library will not be lent until after the expiry of one month from the date received. The current number of a periodical may not be borrowed.

(g) Borrowers retaining publications longer than the time specified, and neglecting to return them when demanded, forfeit the right to borrow until they be returned, and for such further time as may be ordered by the Council.

Any borrower failing to comply with a request for the return of a publication shall be considered liable for the cost of replacing it, and the Council may, after giving due notice to him, order it to be replaced at his expense.

No publication may be reissued to the same borrower until at least seven days have elapsed after its return, neither may it be transferred by one borrower to another.

(h) Publications may not be taken or sent out of the United Kingdom.

(i) Publications returned through the post must be securely packed in a box or otherwise adequately protected.

(j) The Library may be used for reference by Fellows, Ordinary Members, Associates and Affiliates during the office hours of the Society.

(k) Parcels should be addressed:

THE ROYAL SOCIETY OF HEALTH
90 Buckingham Palace Road, London, S.W.1

WPL 4487

22101738349

THE ROYAL SOCIETY

FOR THE PROMOTION

OF HEALTH

90 Buckingham Palace Road, London, S.W.1

Class No. IAr/1·1 Acc. No. 21799

This book is returnable on or before the last date Marked below

HISTORICAL

29 JAN 1968

J. T. Cruttenden Esq
With the author's kind regards

PREVENTION OF CONSUMPTION.

Digitized by the Internet Archive
in 2014

https://archive.org/details/b2042047x

PRACTICAL OBSERVATIONS

ON THE

PREVENTION OF CONSUMPTION.

WITH STATISTICAL TABLES
OF
THE PREVALENCE OF THE DISEASE, AND OF THE COMPARATIVE
SALUBRITY OF VARIOUS PLACES, AT HOME AND ABROAD.

BY

JOHN HOGG, M.D. Edin.

Author of "A Series of Chemical and Medical Tables," "Treatise on the Health and Habits of the Inhabitants of the Metropolis," &c.

LONDON:
ROBERT HARDWICKE, 192, PICCADILLY.
1860.

M18289

WELLCOME INSTITUTE
LIBRARY

Coll.	welMOmec
Call	
No.	WF200
	1860
	H71p

PREFACE.

In submitting the following observations to public notice, I take leave to state one or two circumstances that have induced me so to do.

In setting out in life, every medical practitioner embarks, as it were, on a voyage of discovery. It is more than probable he will meet with many objects not laid down in the charts. Most assuredly he will at times find himself involved in labyrinths, from which nothing but a thorough knowledge of his profession, tact, and courage, can safely extricate him. Many men pass through a long course of successful practice—successful in every sense of the word. They accumulate a mass of useful information, but from some cause or another, the result of their experience is not given to the world. It is every man's duty, I contend, to tell how he triumphed over his difficulties, and, in certain cases, even to recount his failings, for the benefit of those who come after.

Born and bred in the west of Cornwall, where consumption prevails to a fearful extent, and the first five years of my professional career having been passed in my native place, the havoc caused by the disease among my friends and schoolfellows, did not fail to make a painful impression on me. This first directed my attention to the subject.

I had the advantage, subsequently, of pursuing my studies for one season, in the clinical wards and dissecting rooms of *La Charité* Hospital, Paris, whence the great LAENNEC was then shedding the light of his brilliant discoveries, not only over France, but over the whole of Europe;—they were the last rays of departing genius! he died before the expiration of the year to which I allude.

On taking my degree at the University of Edinburgh, phthisis was the subject of my inaugural thesis.

Above thirty years have elapsed since I commenced practice in London. Fifteen of these were spent in connection with the Dispensary, and afterwards the Hospital, of University College. This gave me ample opportunity of following up my inquiry. During the six years the former institution was in existence, I was its resident medical officer. Part of my duty was to conduct the *post-mortem* examinations, at many of which Sir Robert Carswell, then Professor of Pathology, attended.

The treatment that was found most successful, is that detailed in the following pages; I have pursued it up to the present time, the experience of each succeeding year confirming its value and efficacy.

The aim and object of the essay is *prevention* rather than *cure.* The collective evidence of eminent men of all time, goes to prove that, if good is to be done, it must be done quickly. When the physical signs of consumption are so palpable as to be distinctly recognized and traced by the aid of the stethoscope, the balance is sadly against the patient. Active measures must be adopted long before matters have arrived at this pass. It is in predisposition, in *diathesis,* that the change is to be worked; then there is every prospect of success.

Deep and earnest attention has been paid to the etiology and pathology of the disease; the nature and quality of tubercle, as well as of other morbid deposits; the composition of the blood, and of all the secretions of the body; have been thoroughly and satisfactorily examined, in reference to it, both in England and on the Continent; but I doubt if *preventive* treatment has engaged the attention of physiologists, as much as the importance of the subject demanded.

The observations here advanced are practical throughout. Some may consider that the detail borders on the tedious; but where the navigation is intricate, can the chart be too explicit?—can the shoals and landmarks be too distinctly displayed?—

in fine, can a course of prophylactic treatment be too strictly and minutely defined ?

The preventive influence of climate has not yet been sufficiently investigated. This is partly owing to the many difficulties that stand in the way. Our intercourse with distant parts of the world becomes, however, greater and more rapid every day, so that we are obtaining data on which to form sound and practical conclusions. Some recent information bearing on this subject, will, it is hoped be found in the following pages.

J. H.

51, Gower Street,
February 29*th*, 1860.

CONTENTS.

CHAPTER I.

INTRODUCTION ....*page* 1.

Prevalence of Consumption.—Its Nature unknown until lately.—Number of Deaths from Consumption.—Its Fatal Effects, compared with Epidemics.—Fatal to Lower Animals.—Consumption a General, not a Local Malady. — Pathology.—Tubercle. — Opinions of Bayle, Stark, Andral, Laennec, Alison, Elliotson, Carswell. — Character of Tubercle. — Its Development, Seat, and Progress. — Found occasionally in Aged Persons.—Opinions, as to its Cyst, of Alison, Bichat, Macarthy, Cruveillier, Key, Velpeau. — Tubercle sometimes absorbed.

CHAPTER II.

PREDISPOSING CAUSES ....*page* 16.

Predisposing and Exciting Causes sometimes combined.—Hereditary for the most part.—Weakly Parentage: opinions of Mason Good, Hilliet, Bemiss, Sir J. Clark, Howe, Dean Trench, Elliotson, on Consanguinity of Parents.—Unnatural Custom of Dry-Nursing. — Opinions of Merriman, Astley Cooper, Col. Smith, on the subject. — Age most prone to Consumption.—Precursors of the Disease.—Opinions of Todd and Ancell. — Certain Predisposing Signs. — Emaciation. — Bulbous Extremities of Fingers.—Progress of Physical Signs. —Mental Debility.—Hectic.—Cough.—Pulse.—Head-ache.—First deposition of Tubercle.—Opinions of Louis, Laennec, and Fournet.—Absence of Pain.—Unnatural Sense of Heat and Cold.—Tranquillity of Mind.

CHAPTER III.

EXCITING CAUSES ....page 44.

Climate.—Climate of England conducive to Consumption.—Same Causes induce Consumption and other Scrofulous Disorders.—Opinions of Liebig.—Comparison of Countries.—Opinion of Mühry.—Certain Elevations above the Sea-Level free from Consumption.—Mexico and Quito; Finland and Lapland.—Marstand.—Consumption in India.—Counties of England differ according to Position and Climate.—Mechanical Injuries.—Mental Depression.—Occupation.—Mortality in certain Professions and Trades.—Persons employed in Agriculture and Manufactures.—Certain Counties compared.—Miners in Metal and Coal Mines compared.—Effect of Chemical Laboratories.—Certain Occupations, Postures, and Fashions of Dress.—Contagion.—Causes assigned at Brompton Hospital.—Evil Effects of Hospital Atmosphere.—Inoculation and Death by Consumption of Laennec.

CHAPTER IV.

GENERAL TREATMENT ....page 72.

Residence.—Elevated Site desirable.—Air at Quito and Mexico.—Places characterized by Growth of Fungi.—Mortality among Animals in Regents Park.—Climate of Cornwall.—Rainfalls in England, London, and Cornwall.—Quality of Air near the Sea.—Mortality in Counties of England compared.—Table of Population, and Density of Population.—Mortality least in Sparse Populations.—Average Duration of Life in each County, at four different Ages.—Amount of Longevity in each County.—Crowded Habitations worse than Density of Population.—Population, Density, and Mortality of certain Seaside Places.—Great Mortality among Troops quartered in London, from confined nature of Barrack-rooms, especially from Consumption.—Amount of Pulmonary Disease, and of Consumption, in certain Town Districts, and in the Country.—Amount of Consumption in the Western Mining Districts.—Cases of Alston and Leek.—Actual amount of Consumption in each County, amongst Males and Females. — Unhealthy Districts do not necessarily exhibit most Consumption.—Consumption, as well as Goitre, common among Females in Derbyshire.—Much Consumption in Hampshire.—Great Salubrity of Hereford and North York.—Apparent Paradox as to Rutland, where Greatest Proportion of Consumption, and also of Longevity.—Somewhat similar Results in Wales.—Great Differences between Counties. —Coal and Pottery Districts comparatively free from Consumption.—Propriety of Migration of Families.—Selection of Residence.—Nature of Springs.—Moral Agents.—Temperature of Habitations.—Advantages offered by certain places, in Asia, Africa, Central America.—South of Europe not exempt from Consumption.—Cape of Good Hope.—Climate of India.—Mortality among Troops in India from Consumption.—Difference between Fair and Dark-Complexioned Persons. — Mühry's Report on Climates.—Salubrity of Syria.—Consumption rare in Russia; unknown in Iceland and Finmark.—Mortality among Troops at Home and Abroad.—Sailors suffer less from Consumption than Soldiers.—Impolicy of assembling Consumptive Persons in Hospitals.—Contagion of Consumption.—Occupation for Consumptive Persons.—Postures.—Beds. —Various kinds of Exercises.—Choice of Food.—Proper Rearing of Infants.—Danger of Dry-Nursing.—Early use of Animal Food advantageous.—Diet exclusively Vegetable unnatural and hurtful.—Scrofula not found where much Animal Food consumed. — Regulation of Children's Diet — their Clothing — Bed-Clothing.—Passage from Youth to Manhood critical.—Diet proper for Young Adults.—Effect of Oleaginous Food.—Proportions of Oil in certain Articles of Food.—Dr. Lankester's Opinions.—Composition and Qualities of certain Vegetables.—Composition of Meat.—Dr. L. Playfair's Opinions.—Importance of Cookery.—Great Neglect thereof in England.—Qualities of Food.—Various Aliments.—Value of Fruit.—Origin of Fermented Liquors.—Their Composition.—Temperance Principles. —Fermented Liquors not Necessaries: great Adulteration of these. — Bread, and its Adulterations. — Dauglish's Patent Aerated Bread.—Water.—Adaptation of Diet to Season of the Year.—*Lent*, and its Advantages. — Habits of Punctuality conducive to Health.—Inferences as to Causes and Preventive Remedies of Consumption.

CHAPTER V.

Medical Treatment............................*page* 175.

Medical Treatment comprised in two words—Epispastics, and Tonics. — Treatment formerly altogether speculative. — Only Principle dependent on restoring Tone and Healthy Action of various Organs of the Body.—Moral Agents.—Application of Irritating Plasters. — Consumption sometimes checked by Small-pox supervening.—Administration of Bitters, Iron, and Mineral Acids.—Failure of Specifics.—Remarks on Oils and other Remedies.—Question of Curability in various Stages.—Prevention the safer course.—Conclusion.

Appendix ....*page* 205.

Cases.

ON THE

PREVENTION OF CONSUMPTION.

CHAPTER I.

INTRODUCTION.

Consumption is a disease so formidable in its character, so fatal in its consequences, and so prevalent, that it may, in Europe, and North America, be considered the chief scourge of the human race. It differs from other diseases in the selection of its victims, and in the insidious manner of its approach; for its progress appears to be concealed, more especially from the object of its attack, even if its workings are visible to others. Did it overtake the aged, to give vent to the ebbing tide of life, we should submit to it with resignation; did it nip the bud of promise in infancy, parents' feelings would be spared in proportion as the child was young; did it depend on hunger, cold, and misery opening the door to admit it, we should at least know the means of preventing its progress; were it to select the dissipated and profligate—those whose constitutions had been undermined by their own vicious courses, we should then have the satisfaction of explaining the cause of its selection. But it passes over infancy, and it troubles not old age, neither is it a respecter of persons: it recklessly seizes on those just embarking in life—the young, the virtuous, and the beautiful, the objects perhaps of our tenderest regards and future hopes.

Consumption has existed in all ages, and in almost all countries; it prevails alike amongst civilized and barbarous nations. It is comparatively rare in tropical climates, and also where the air is uniformly cold; it occurs where the temperature is variable, but it is most prevalent where the climate is cold and damp, as well as variable.

It is the cause of death to about one-eighth of the whole population of Great Britain and Ireland; and immense as this proportion is, it was even greater, forty years ago, when a sixth, or seventh part of the people, fell victims to it. It is pleasing to reflect that the improvement is in some measure, and with justice, ascribed to the first principles of health being better understood,—in short, to the improved state of medical science.

Although consumption has prevailed from the earliest period, it is only of late years that its real nature has become known. It was at one time thought to arise from *inflammation*, running its course in the ordinary way, producing suppuration, change of structure, and gradual destruction of the part; that the inflammation was produced by cold, by mechanical irritation from dust, vitiated air, or unknown causes; that the chief, if not only, precaution requisite was, to obviate such causes,—in fact, it was considered almost exclusively a disease of a local character, originating in, and confined to, the lungs.

These opinions, though partially correct in reference to the last, and hopeless stage of the disease, do not bear on its cause, or real nature. It is now known, beyond all doubt, to depend on constitutional debility, on a want of power in the system, on an impaired state of the assimilating organs, —in a word, on a *strumous* deathesis, a weakness formerly recognized as affecting the glands, cartilages, integuments, and some other parts of the body; but it was reserved for the last half-century to show, by the aid of pathological science, that it was the origin and foundation of other more serious diseases, including consumption and insanity.

The identity of scrofula and tubercular disease was long disputed: they are now acknowledged to be one and the same—but more of this hereafter.

If we look at the various official reports in this and foreign countries, we still find the disease to be more prevalent in some places than in others; and it will be found, also, that where the causes of scrofula most abound—where, for instance, we have a damp, cold, variable climate, an ill-drained district, close, badly ventilated habitations, with poverty superadded, we shall also find consumption.

Many diseases of the respiratory organs were formerly confounded with consumption. This led to the statements frequently put forth, that as large a proportion as 18 or 20 per cent. of all deaths were caused by it.

From the correct data we now possess, through the admirable working of the "General Registration," it is clear that the mortality from it must have been misstated.

In the year 1847, for instance, the total number of deaths in England amounted to 420,977; of these 53,317 were caused by consumption, or about 12½ per cent. In addition to these, there were 51,115 deaths caused by other diseases of the respiratory organs, which make a total of 104,432, or nearly a quarter part of the whole mortality. The case then stands thus: consumption carries off rather more than an eighth; other diseases of the respiratory organs, viz., croup, bronchitis, pneumonia, and asthma, another eighth, or altogether about a fourth part of the population.

But if the subject be examined more closely, it will be found that a much larger proportion of *adults* die of diseases of the lungs than 25 per cent. Above a third of all who are born,* die before reaching five years of age, and most of these are carried off by diseases, for the most part, peculiar to infancy, as, convulsions from teething, measles, mesenteric decline, scarlatina, hydrocephalus, and some others; so that, as diseases of the respiratory organs prevail less among infants, the proportion must be considerably greater among adults, to make up the numbers stated above. In fact, these diseases are the cause of death in, at least, one-third of all cases above ten years of age, or 33 per cent.; from which it is obvious that consumption must carry off even a greater proportion than is calculated above.

---

* 158,815 out of 420,977.

It has been long known, before we had any statistical information on the subject, that the disease was by far the most frequent cause of death,—indeed, it required no collective evidence to prove what was too painfully manifest in every district, if not in every family.

It has been the opprobrium of medicine, from the earliest ages, though more has been written on the subject than on any other malady affecting the human frame. Little or no progress was, however, made in opposing its ravages till of late years; its nature, as has already been observed, not having been so well understood as at the present day.

It has engaged the attention of the most eminent physicians at all times, and in all places, but they could neither discover the cause, nor suggest the remedy. Age after age has passed away, and it has continued to claim its victims. No endemic plague, nor epidemic pestilence, however virulent, has produced the devastation it has caused; the phrenzy of war, notwithstanding that it leads to the immolation of millions, is harmless in comparison with it. For these scourges are circumscribed in their influence, are at most *periodical*, or merely temporary; the causes of them are tangible, external, in fact, whereas the origin of this dire disease is for the most part internal, obscure, and frequently innate. Physically speaking, and even morally, a kind of mystery hangs over its source, and one of our objects is, if possible, to trace this out, and correct it, before it has acquired the power of doing harm to the constitution.

Consumption is not only fatal to the human species, but also to many of the lower animals: those which approach nearest to man in their organization, the Simia tribe, suffer most; but the felines—the lion, tiger, leopard, panther, and others, also fall victims to it; these animals are carried off in the countries where they are indigenous, but when they are removed to a colder climate—are brought, for instance, to this country, they sink under it in much greater numbers. The main difficulty, indeed, of keeping these in this climate, consists in guarding them against the approach of this disease. Parrots and other birds belonging to warm climates suffer from it when transported to colder countries. We see a striking example of the havoc produced by consumption, in the collection of the Zoological Society, in Regents Park: the mortality among the animals here, compared with that observed in other places, and other collections, not only puts the fact in a very perspicuous point of view, but throws considerable light on the causes of the disease, which will be hereafter reverted to.

Indeed, as much is to be learned from the observance of collective evidence, such as is deduced from the prevalence of the disease in certain countries, and among certain classes of beings, as from the investigation of individual cases alone, which has hitherto formed the chief ground of inquiry on the subject. Were the disease of a *local* and not a constitutional character, this course might hold out some hope of the discovery of a sure remedy or preventive; but as the case is altogether otherwise, we must look to general, rather than local circumstances, for the cause.

From this comprehensive—more extended view of the evil having been taken of late years, more particularly in this country, much benefit has unquestionably accrued, without in the least underrating the value of the laborious researches of our neighbours in France. Indeed, confining the inquiry to minute *post-mortem* examination, or, attending exclusively to the symptoms of the disease during life, form a very unsatisfactory method of looking at the subject.

There is abundant proof that the disease is dependent on general causes, and that it may be cured on general principles—by any means, in fact, that can obviate constitutional debility.

It cannot be too strongly urged that, whether we have to prevent its accession, or to stay its progress, by overlooking, to a certain extent, present appearances, and by going at once to the root of the evil, we are most likely to succeed in our treatment, even although the remedics employed may seem at first to aggravate some of the existing symptoms. The pulse and the cough, for instance, may be somewhat excited at first by the application of the remedies here recommended; but it is pleasing to observe that the excitement thus produced is only temporary, and that it gives way to an improved action in the constitution.

It seems, indeed, perfectly useless attending, and ministering to, outward symptoms, except in the last and hopeless stage, and then only with a view of alleviating the patient's sufferings. The remedics necessary at last would be absolutely injurious employed early in the disease. This appears to be the error most commonly fallen into; for, assuredly, in the beginning, effects are constantly mistaken for causes, medicines are used to quiet the pulse, and stop the cough, instead of going at once to the constitutional disturbance which is the cause of these.

How often have the local symptoms entirely engaged the attention of the physician, and the main points of the case been left untouched? How frequently has the cough led him to administer copious draughts of nauseating, or sedative drugs, which, of all others, should be studiously avoided? for they destroy the natural appetite for food, and assist in undermining the patient's strength.

Consumption exists either in the acute, or chronic form, but most commonly in the latter. Its duration in the acute form may be from three to four months; as a chronic malady, its course extends to as many years. Cases are recorded in which it has lasted above twenty years—these, however, are rare. According to the observations of Louis and Bayle, the average duration of the disease is from one to two years. There is, however, no doubt that the duration is longer than it formerly was. This is ascribed by Dr. Williams to the free use of cod-liver oil; though it is more probably owing to its general treatment being conducted on more rational grounds.

When a person has died of consumption, the lungs are found to contain a morbid, scrofulous deposit, denominated *Tubercle.* It is not uncommon to meet with this substance scattered over the respiratory organs, as well as in other parts of the body, if the person have *not* died of this disease; unless, however, tubercles are found in the lungs, they are not found elsewhere; but the converse does not hold,—they are often seen in the lungs, and nowhere else.

Bayle, an eminent authority, considered that there might be other morbid conditions leading to consumption, besides tubercle, viz., a cancerous, a melanotic, a calculous, and ulcerous; but later observations have established the fact that tubercle is the sole morbid cause of the disease.

This was first advanced by Dr. Stark, an English physician, and the opinion has been confirmed, beyond all doubt, by more recent writers, more particularly by Andral, Laennec, Alison, Elliotson, Carswell, and others.

Dr. Stark wrote, in 1769,—

> "As the appearances on dissection, though extremely uniform, are very different in degree, it may be useful to arrange them under the following heads:—*tubercle*, *vomica*, state of the *air-vesicles*, and *cellular substance*, state of the large *blood-vessels*, *trachea*, the *degree* of morbid affection, and some other circumstances."

Dr. Stark was an enthusiast in the study of medicine, and applied himself very zealously to the effect of various kinds of food on himself. To such an extent did he carry his experiments, that he fell a victim to his zeal in his 29th year, as proved by John Hunter, who examined his body after death.*

When the lung is cut into, a small grey, semi-transparent substance is discovered, which appears to be the rudiment of the tubercle. When the lung is pressed between the finger and thumb, the tubercles feel gritty, or sandy, in their earliest stages; they are also felt and seen to be various in magnitude, from the size of a millet-seed, to that of a cherry, or even larger; single, or in groups, and in various stages of development.

The tubercle remains a longer or shorter period, according to the physical condition of the person, in its original or early state; then gradually increases in size; several that are clustered near each other, approximate and come together, forming a somewhat irregular mass: this mass has been observed, at times, to engross a very large portion, and, in some cases, even the whole of one lung. In one case, in addition to the lungs being densely filled with tubercles, I found a hard, solid mass, the size of a stout man's fist, pressing on the right bronchus, and lower portion of the trachea, consisting entirely of tuberculous substance. There were in the same case several tubercles as large as walnuts, adhering closely to the ribs, underneath which the bone was partially absorbed.

---

* See his works, edited by Dr. Carmichael Smith.

It does not appear indispensable that the tubercle shall progress in its development; the seed, though deposited, may not germinate, or increase in size; there is evidence that it may remain in its embryo state for an indefinite period, extending over the ordinary term of human life,—that is to say, tubercles have been found in the lungs of old persons which appear to have been deposited in early youth.

As the tubercle advances in development, it consists of a pale yellow, or stone-coloured, soft cheesy substance, which when pressed between the fingers, is somewhat inconsistent, some portions being harder, and some softer, than others; and occasionally a chalky friable matter is embodied in the softer substance. The tubercle continues to be of a cheesy hardness for an uncertain period; it then softens, the process commencing at the centre, and extending towards the surface.

The air-tubes and cells, the blood-vessels, and even the parenchymatous substance of the lung itself, is compressed by the enlargement of the tubercles, the latter tissue forming the *sac* in which they are contained, and which is of a silvery, fibrous, or fibro-cartilaginous texture; consequently the tubercle may have a communication with an air-tube or not, according to circumstances.

If a communication exist, the contents, or rather, substance of the tubercle, which is now identical with strumous pus, is expectorated by the patient, together with pus of an ordinary character, secreted by the *sides* of the tuberculous sac, and probably by the mucous membrane of the bronchial tubes; and also with some blood, which, according to Carswell, is furnished in the following manner:—The tuberculous matter, or mass, pressing on the branches of the pulmonary veins, belonging to the affected lobules, obliterates them, and this interruption to the circulation is followed by an effusion of blood into the bronchi.

The Hœmoptysis in consumption, according to this author, can only be accounted for in this way, and not by supposing ulceration to have taken place; for the latter could only operate in the later stages, whereas the blood is frequently noticed in the sputa of consumptive persons in the incipient stage of the disease.

The tubercles approximating, and forming amorphous masses, gradually render the whole lung solid, and consequently incapable of performing the office of respiration.

The now semi-liquid character of the tuberculous mass, admits of its being expectorated through any adjoining bronchial tube opening into it, or ulceration between it, and a tube occurs, through which it finds vent in the same manner.

The tuberculous contents are found to consist of *fibrine*, *albumen*, *gelatine*, and the *earthy phosphates*,—the components of healthy fluids and solids, but in different proportions, according to the stage of the disease. This fact furnishes us with a valuable hint as to the kind of remedies we should employ: it points out that we should pour in whatever materials are calculated to supply good blood, bone, sinew, and muscular fibre.

Authors are divided on the question of the tubercle having a cyst. Recent investigations go to establish the fact that they are not generally encysted, but that they are sometimes found to be so, the compressed parenchymatous substance being mistaken for a cyst in most cases, where it was supposed to exist; indeed, encysted tubercle is considered to be very rare.

Another question remains unsettled, viz., whether or not tubercles contain traces of *organization*. Some writers maintain—Bichat, Alison, and Macarthy among the number—that they have discovered blood-vessels on, and even in, the tubercle; opposed to this opinion we have Cruveillier, Key, and Velpeau. It is not improbable that the truth lies between the two extremes, and that this body is found, sometimes organized, and at other times not so, as is the case with ordinary pus.

It is not easy to reconcile the fact of tubercles being absorbed, or otherwise removed from the system, with the idea that they are organized bodies; we see decomposed blood, or muscle—pus thrown off as an excretion from the body,—and in the same way tuberculous matter is often expectorated; but where any reorganization has taken place, whether in membrane, or tumour, we seldom, if ever, see the part thrown off spontaneously, however desirable its removal might be. On the other hand, we see that the tubercle, after being partially developed, may remain for an indefinite period in the system, without destroying life; the only inconvenience being an increased irritability of the part, and even that is not always experienced, any more than from the presence of a foreign body—a bullet or a needle, accidentally deposited in the body.

The tubercle is found most commonly in the air-cell, or in the mucous membrane of the bronchi and air-tubes. According to Carswell, if an organ have a *mucous* tissue, there the tubercle will be found, in preference to other parts constituting the organ: this is the case, not only with the respiratory organs, but with the stomach, liver, bladder, and organs of generation.

The bronchial glands are frequently the seat of tuberculous matter, which, on softening, is expectorated, carrying with it chalky friable fragments, of greater or less size, and in considerable quantity, leaving the glands themselves *atrophied*, if they can be discovered at all.

There have been very many proofs of these chalky masses being formed in the *lungs*, and thence expectorated. Several such cases have occurred at the City of London Hospital for Diseases of the Chest;* though Louis says they were so rare in France that he had never seen an example of it.

---

* See *Medical Times*, December 10th, 1853.

CHAPTER II.

PREDISPOSING CAUSES.

The causes of consumption are twofold—*predisposing*, and *exciting;* but it does not follow that both shall have existed prior to the establishment of the disease. The predisposing may be so strong in a person that no care, or caution, can prevent its development; and on the other hand, an exciting cause, such as cold, a damp residence, or an unhealthy occupation, may induce it in a person of robust frame, descended from healthy parents, and in whose family the disease had never shown itself.

When there is a general failing of the constitutional powers, without any specific complaint, particularly in young persons; at the time when the organs of assimilation have just completed their duty, as far as the growth, or stature, are concerned, and when the passions are ripening—when, moreover, there is an hereditary taint to be apprehended; or when the circumstances of the individual in reference to his occupation, his residence, his prospects in life, or his feelings, are not of the most favourable character, there is ground for apprehension that consumption will be developed, before the system acquires sufficient vigour to resist the tendency to mischief.

The predisposition may be derived from hereditary cause, or from accidental circumstances, not absolutely attributable to any fault in the parent, and yet it may be said to be congenital: thus, a child may be born prematurely, and thereby display a weakness of constitution not unlikely to lead to consumption. One of the parents, though not of a consumptive disposition, may yet have been scrofulous in other respects: for instance, the father may have been the subject of glandular swellings, calculus, epilepsy, gout, or other maladies, traceable to a strumous diathesis, but never have suffered from any weakness in the chest; yet his offspring shall inherit the general weakness of the parent, but none of his specific tendencies, exhibiting however, too soon, that the poison has selected a more important organ for its nidus, namely, the lungs.

That the difference in the organs affected in the parent and child may be accounted for by the various circumstances attending the two, their residence, occupation, &c., there can be no doubt; as the strongest predisposition may, under favourable circumstances, be checked, if not eradicated. The mother of this child may have been healthy, but the father's constitution and temperament may have predominated, to the disadvantage of the offspring.

The reverse, as to the parents, may also happen: the father may have been all vigour and health, and the weakness been on the mother's side. This is one source of a congenital scrofulous disposition.

The *age* of the parent has a marked effect on the strength of the child. The children of young parents are more vigorous than those of old, and nature evidently leans towards early marriages. From a mother of twenty or twenty-five, and a father five years older, we unquestionably have the strongest progeny. From such unions sometimes as many as ten or twelve children issue, with a difference of more than twenty years between the ages of the eldest and youngest.

If any one will take the trouble to observe any such cases as have come within his own knowledge, he will, in all probability, find that the first children are the strongest; and if consumption present itself in the family, it will be the youngest members that are attacked.

When one or both parents are *elderly* when they marry, the prejudicial effect on the children is manifest, leading very frequently to consumption, or to a weak development of the cerebral organs; or they are diminutive, degenerate. The same defect is observed when only one parent is old, if that one be the mother.

As regards the healthy and vigorous condition of the community, therefore, early marriages ought to be encouraged; and everybody knows that the feelings and tastes of young people amalgamate much more readily than do those of persons whose habits are formed and characters set—who have delayed paying their vows at the temple of Hymen, till their tempers and opinions have become rigid and unaccommodating.

Another frequent foundation of this innate weakness of constitution is the *consanguinity* of parents, though both are individually in possession of robust health. It is not uncommon for near relations—first cousins, for instance, both grandchildren of one man, to intermarry. Nature evidently abhors this connection, and unhappily the sins of the parent are visited on the children.

There are some who defend the custom; but it is condemned by a large majority of writers, as well as by all practical men. The children of such unions are frequently scrofulous, and though much may be done immediately after birth, by providing a healthy wet-nurse, yet the consequences on the progeny are almost always injurious.

It is to be regretted that such marriages are permitted. Sir J. Clark observes,—

> "Above all things, persons predisposed to consumption should omit the too common practice of intermarrying among their own immediate relations—a practice at once a fertile source of scrofula, a sure mode of deteriorating the intellectual and physical powers, and eventually the means of extinguishing a degenerated race."

Mason Good remarks,—

> "There can be no question that intermarriages among collateral branches of the same family, tend, more than anything else, to fix and multiply and aggravate hereditary predisposition; and hence, nothing can be wiser, on physical, as well as on moral grounds, than the restraints which divine and human laws have concurred in laying on marriages as between relations."

Dr. Hilliet, of Geneva, says the practice prevails in that city, of relations intermarrying, and that the evil effects are seen in the issue of such unions, in the form of idiotcy, deaf mutism, scrofula in all shapes, consumption, insanity, and paralysis; and adds, that the subjects themselves are seldom long-lived.*

Dr. Bemiss, of Louisville, says, as the result of his observations, that out of 130 children, the offspring of first cousins, only 36 were healthy.† Dr. Howe narrates the history of 17 marriages of consanguinity :—

> "These produced 95 children; of whom 44 were idiots, 12 scrofulous and puny, 1 deaf, 1 dwarf, and 37 only in tolerable health." ‡
>
> "Quakers furnish much more than their share of insanity in the country; but, for this singular result, their system of intermarriage is doubtless much to blame." §

Dr. Trench, Dean of Westminster, adds his opinion and testimony :—

> "The natural horror everywhere felt in regard of marriages contracted between those very near in blood, has been always, and with right, appealed to as a potent argument against such unions.

---

* *Dublin Medical Press*, May 28th, 1856.

† *Medical Times*, October 30th, 1858. Letter from Dr. Aveling, of Sheffield.

‡ *Ibid.*

§ *Quarterly Review*, April, 1857.

> "The induction is so large—that is, the nations who have agreed in entertaining this horror are so many, oftentimes nations disagreeing in almost everything besides,—the times during which this instinctive revolt against such unions has been felt, extend through such long ages, that the few exceptions, even when they are of civilized nations, cannot be allowed any weight; and of course, still less the exception of any savage tribe, in which all that constitutes the human in humanity, has now disappeared." *

Dr. Elliotson, and many other writers of great experience, give their evidence on the same side. It is, indeed, much to be regretted, that the Legislature has not prohibited this connection; assuredly nature never intended a man to see his grandson and granddaughter intermarry. Parliament professes to be very tender in touching on the liberty of the subject, forgetting how grossly they interfered, in 1835, with the said liberty, in forbidding the marriage of a man with his deceased wife's sister,

> "A consummation devoutly to be wished,"

a union, absolutely righteous, when compared with the other incestuous connection.

It may be observed, that the scrofulous diathesis engendered by these unions is as frequently displayed in the breaking down of the cerebral and spinal systems—leading to insanity, fatuity, or other helplessness,—as it is in leading to consumption. How dreadful the prospect in either case!

Again, a child may be born under adverse circumstances, from the mother having had bad health

---

* "Proverbs and their Lessons," p. 126.

during her pregnancy, or having been frightened, or greatly depressed in mind, or not having had proper support and nourishment—though this last cause operates less on the well-doing of the infant than might at first be expected; nature will rob the mother of her own substance, rather than allow the new creature to suffer. These circumstances, however, have their effect more or less, and must be considered as congenital causes of weakness in the child, leading probably to consumption. One cause of an infant not being well developed prior to birth, is the circumstance of the mother, during her pregnancy, having had another child at the breast. Nature seldom commits herself in this way, it must be admitted, but such cases every now and then occur. This happens principally with lymphatic temperaments, who are generally strumous; and it is a cause that must by no means be overlooked, as it is with such subjects that we have to deal.

At birth, the foundation of consumption may be laid by the unnatural, and consequently highly-objectionable practice, unfortunately very common in fashionable life, the dry-nursing of children, or bringing them up by hand, as it is termed. A more prolific cause of disease does not exist; and a cruel expedient it is, if the parent have the means of providing a wet-nurse, being herself unable to nurse her child.

The case is sometimes even worse; for we meet with instances of a mother who does not possess the natural feelings of a parent: notwithstanding that she is perfectly capable of discharging her duty to her infant, the helpless little being is handed over to a hireling, to be fed out of a bottle or spoon, to take its chance for health or sickness, for living or dying; while the mother mixes in the fashionable world, and takes her round of pleasure, as though her first duty were only secondary.

Children thus nurtured are frequently lost in the rearing; many, it is true, are thus brought up, and they look fat and rosy, but they have not the stamina of children reared in the natural way: there is no substitute for mother's milk, that is, human milk; and instead of having bone and muscle, they are made up of a fictitious material, soft, flabby, and very ill adapted to the wear and tear of after life. Children thus reared seldom emerge from a peculiar delicacy of constitution until they are far advanced in life, if they do even then. On the other hand, we have innumerable proofs of consumption, epilepsy, hydrocephalus, and other evils, issuing out of this unpardonable custom. When the mother is delicate, predisposed to any particular disease, or is, from other natural causes, unable to supply her child with milk, the case is widely different; she should not persevere in her attempts to suckle her child, but a healthy wet-nurse should be provided.

An eminent authority * has stated—

---

* Sir A. Cooper, on "Anatomy of the Breast."

> "That a female of luxury and refinement is often a worse mother than the inhabitant of the meanest hovel, and who nurses her children, and brings them up healthy under privations, and bodily exertions to obtain subsistence, which might almost excuse her refusal."

Dr. Merriman* was of opinion, taking into consideration all classes of society, that—

> "Not more than two in ten children brought up by hand survived from eighteen to twenty months."

The importance of selecting a healthy wet-nurse is obvious: she is a kind of third parent to the child, and must exercise a powerful influence on its future moral and physical destiny. Colonel Smith † has remarked—

> "The effect of employing negro wet-nurses, universally adopted in the tropics, may be suspected to have some influence on the appearance and temperament of white children. Numerous instances of external marks, and of qualities for good or evil, may be traced to the practice, for none of the same kind occur in Europe."

The predisposition to consumption is frequently detected at a very early period of life. It is noticed not only by professional men, but by common observers, long before complaint is made by the patient himself, and long before the local disease—the deposition of tuberculous matter in the lungs, commences; and this is the season for well-directed prophylactic treatment, when it is probably, and most frequently, attended with success.

---

* *British and Foreign Medical Review*, July, 1840.

† On "Natural History of Human Species."

The predisposition is generally displayed in youth, and it may continue to threaten throughout the ordinary term of life, the person at length breaking down under some accidental illness, not necessarily connected with derangement of the respiratory organs. It may, however, display itself for the first time at middle age, or even in advanced life; but such cases are not of frequent occurrence.

The age most prone to consumption is from twenty to thirty. It has been observed in persons of sixty and even seventy; while, on the other hand, it has been seen in very young children, in some rare instances, I believe, as young as one year of age.

The predisposition is generally marked by disturbance of the digestive functions, termed tuberculous cachexy, or strumous dyspepsia. These have been treated of by many writers—Sir J. Clark, Dr. Todd, and Mr. Ancell, among the rest. The last-named considers the formation of tubercle a distinct disease of the blood, leading to scrofula, consumption, tubercular meningitis, and mesenteric decline.*

The countenance becomes pale, of a slightly blueish or leaden colour; in dark complexions, of a sallow olive greenish yellow hue. In other cases, in either sex, the skin presents a beautifully fine, delicate, transparent appearance, perpetually varying from pink to white, and *vice versâ.*

---

* *Medical Times*, 1850.

Again, the forehead and face are not unfrequently covered with unsightly small pimples, or specks, *acne punctata;* the eyes assume a large, lustrous appearance, and the whole physiognomy acquires an air of mild benevolence, which seems peculiar to the approach of this disease. Sometimes the skin is harsh and dry, the hands and feet are cold and livid, much tormented in winter by chilblains; the muscles are flabby, and in pinching the skin or flesh, of the arm for instance, a peculiar puckered appearance remains for some time after.

The tongue is redder than usual, especially towards the extremity, and along the margins; the anterior part being thickly spotted with small red points, of a still brighter colour, the central portion being more or less furred. There is generally thirst; the appetite varies considerably—sometimes it is craving, and the breath is often fetid.

The bowels are usually confined, though occasionally looseness prevails. The evacuations are unnatural, of a pale greyish colour, often mingled with mucus, sometimes with imperfectly digested food. The catamenia are scanty, assume an unhealthy appearance, or disappear altogether. The urine is often turbid, sometimes highly coloured, and depositing a mucous sediment.

The sleep is seldom sound or refreshing, especially in the early part of the night, and there is a great tendency to perspiration. At one time we see the person nervous, or hypochondriac, occasionally listless and drowsy; at another, he is all hope and cheerfulness.

This may be considered the commencement of the disease, and this is the period when relatives and friends often ask the vital question—"Do you see any signs of consumption?" There are probably other indications which must be closely examined in connection with those already detailed, for we cannot as yet say, either by aid of the stethoscope, or by any other direct means, whether or not a tuberculous deposit has commenced. It behoves us therefore to take all the symptoms together into account, and to balance the probability, or otherwise, of the disease being checked.

Emaciation is almost always an accompaniment of the state of system above described. It creeps on by most insidious and imperceptible degrees. It may be noticed by the friends, but if by the patient, he seems to take pleasure in concealing it, and even hesitates to acknowledge that he is thinner, though his clothes, particularly his gloves, stockings, and shoes, give strong proof of the fact. The hands and feet seem to take the lead in the process, but the chest soon presents a marked alteration. The fingers become thin, skinny, cold, and blue; their extremities are lumpy and *bulbous*, the nails being livid, and rounded, or scutiform, as half a filbert.

Briquet states that, in sixty-three out of seventy cases noted by him, the nails of the fingers were thus shaped. The end of the nail curls round, as a bird's claw; it is dry, and disposed to break. The hands assume a bleached, sickly appearance; the skin is somewhat shrivelled; and the bones, particularly the joints, are frequently observed to be prominent. This altered state of the hands, especially of the finger-ends, appears almost a criterion in males, and in females above the age in which consumption generally presents itself; it does not seem to take place in girls, or young women.

These indications at the extremities strongly prove the impaired powers of the system, and weakness of the circulation in particular. It is therefore obviously our first duty to support the general tone, instead of watching the advance of the local signs—the pulmonary ailments; for, if the strength can be maintained, little is to be feared from the latter, even although cough and accelerated pulse already exist.

The emaciation soon becomes apparent in the chest, both in its anterior and posterior surfaces. The anterior, or sternal portion, though it may have been originally of a good convex form, and sufficiently capacious, becomes flat, and, taken in connection with the clavicles and acromion processes, presents a decidedly hollow appearance; the sternum, ribs, and clavicles being covered merely by attenuated integuments.

In young women, the development of the mammary glands is not only checked, but suppressed. In adult females, in whom, perhaps, the breasts have previously exhibited considerable rotundity and fulness—whether they have borne children or not, the emaciation is very plainly marked; the patient herself, when questioned on the subject, is ready enough to reply that her "neck has gone quite away." Indeed, the appearance of these glands is almost a criterion of her present condition and future prospects. If the breasts remain full and unaltered, whatever the general symptoms may be, there will always be strong ground for hope that the progress of the disease will be arrested.

There is great influence exercised over consumption, even in its plainly-marked onward course, by the mammary glands, when in full functional action, of affording nourishment to the infant. Here we see a remarkable proof of the possibility of cure; for innumerable instances are on record of females, in what is called confirmed consumption, being restored to health, by bearing and suckling children.

The breasts, by discharging their natural office, perhaps for the first time, not only do so in a satisfactory manner, but appear to induce a healthy action in the respiratory organs, as well as in the body generally.

This is collateral proof of the nature of consumption, the glandular system being the most common seat of scrofulous disease.

The emaciation is next perceptible in the limbs. The flesh becomes soft and flabby; the muscles dwindling to thin bands. This arises partly from the inanition that prevails over the whole system, and partly from debility preventing their exercise.

The *tabes* that exists here is analogous, to a certain extent, to that which we witness in children. The mesenteric absorbents, and glands, fail to conduct chyle into the blood, the latter partaking of the tubercular character, and becoming impervious. Here again the glandular system, the favourite depository of strumous poison, lends its aid to destroy the energies of the frame.

The whole body, by degrees, loses its form, and becomes wasted ; the features are sharpened, and pointed, while the eyes stand forth more prominent than before, assuming, as has been already observed, a large and lustrous appearance, and having much softness of expression.

There is, at this time, an evident failing of the mental powers. The faculties of the mind falter, and are incapable of any exertion. Study, or attention to matters of business, are quite out of the question, and even the occupations that once afforded recreation and amusement, now only bring fatigue, and are discontinued.

The mind seems to harbour a presentiment of evil at a very early period, but the feeling is not openly acknowledged ; on the contrary, the sufferer is ever giving expression to the opinion of his being *better ;* even though he is evidently approaching the terminus of his earthly journey, he clings to the hope of recovery, and often discourses cheerfully.

The next sign observed is the occasional *hectic flush* on the cheek. It appears on the slightest excitement, during digestion, or even without either of these causes, principally towards evening, and during sleep; the remote reason of this appearance, except that it generally accompanies debility, is by no means obvious.

Palpitation of the heart, or a *sense* of palpitation, not discoverable by the pulse, frequently attends it.

Like many other incipient signs, however, it is either taken little notice of by the patient, or, if noticed, it is made light of, and almost concealed.

The lungs even now probably present obstacles, by their atrophy and shrinking, to the free circulation of the blood through them, causing an increased effort of the heart to propel it, the tuberculous deposit not yet having commenced.

Debility, or lassitude of the whole frame, also characterises the predisposition. On rising in the morning the patient is not refreshed by his night's rest, although he may have slept well; he gets up tired as when he lay down, or even more so; he is consequently reluctant to rise at the usual hour, and even if he indulge in bed an extra hour, he experiences but little if any benefit.

On taking an ordinary walk, he feels tired. On making any bodily exertion, such as is required in going up stairs, or even *listening* to conversation, the pores of the skin relax, and perspiration ensues; and this not unfrequently takes place without any exertion. There is a feeling of exhaustion; he looks forward to the night to give him rest, and often, unfortunately, he looks in vain.

While these indications are being observed, the patient probably goes about his usual avocations, and if asked how he is, makes but little complaint.

After a time he is affected by occasional headache; but as this is a common, every-day ailment, to which many persons are more or less subject, little or no particular notice is taken thereof, either by the patient or his friends. It is, however, at times very severe, so as to render him incapable of going about. It is not a sick nor a nervous headache, commonly called, but appears to be connected with the impaired action of the heart, already alluded to.

Debility, which seems the forerunner of consumption in every respect, displays itself in many other and palpable forms. Pain in the side, or in some part of the chest—a kind of stitch, is one of the most common and inconvenient symptoms. This is a muscular affection, dependent on debility of the part. In recovery from fever, and other cases of protracted illness, the same thing is observed. These pains are not invariable in persons predisposed to consumption, but are generally so.

The pallor, emaciation, and hectic flush having been for some time noticed by the friends, questions are asked, and the patient confesses that he feels feeble on any extra exertion; oppressed breathing on going up stairs, or any other ascent; that he perspires more than he did, particularly at night; but he is almost sure to add that he has no apprehension about his health.

The appetite frequently remains good even to the last stage of the disease, but generally it is variable, being sometimes much greater than natural; and this circumstance deceives the uninitiated, as they suppose that while a person can eat heartily there is not much ground for apprehension. It is a delusion, however, that is painfully removed as the disease advances. The physical strength failing, nature makes the best efforts to support it by the ordinary means, which is the explanation of the phenomena we witness.

The bowels occasionally participate in the irregular action of the stomach, and go to extremes, either of relaxation, or constipation; but these variations are not general, the action of the bowels, and the evacuations themselves, often remaining natural.

The catamenia do not maintain their wonted regularity; they generally show a want of tone in the system, and become scanty in quantity, as well as vitiated in quality. This is noticed by the sufferer herself, but not mentioned—nay, like other signs of approaching mischief, if not altogether concealed, it is treated lightly, and perhaps its existence denied, not merely from delicacy, but from the same unaccountable tendency that possesses persons predisposed to consumption, to discredit the evidence of their own senses, in reference to the threatening of the disease.

The catamenia begin to fail in quantity at a very early period, in persons predisposed to consumption. There is a want of healthy colour, at every return of the period, though the return itself may be regular, and frequently much pain is experienced. As the pulmonary symptoms advance, the discharge either ceases entirely, or it becomes very irregular, its quality, also, displaying still greater deviation from health.

But young women suffer so frequently from menstrual irregularity from various causes, that this symptom, in reference to the approach of pulmonary disease, is either not known, not noticed, or thought but little of by the friends who are generally the only persons likely to be made acquainted with the fact. The want of tone here again is displayed in a very marked manner.

Leucorrhœa is a common attendant in both married and single women: the discharge is often both profuse and very acrid, producing excoriations, and pain in passing urine. This symptom is sometimes noticed in children under ten years of age, long before any other sign of impaired health is observable, and occasions much surprise and uneasiness in the parents, who are unprepared for such appearances in a person so young.

In males, the advance of puberty is materially checked, or if the person be more advanced in years, the passions subside, in common with the vigour of the system generally. This is frequently one of the first symptoms noticed by the patient, but he keeps it to himself, or at any rate draws no inference from it in reference to the approach of pulmonary mischief. This may arise from his not supposing that any connection exists between two parts of the animal economy so widely separated. When, however, he is questioned by his medical attendant, he will probably admit that he had long noticed the fact.

Cough, which is looked upon by non-professional observers as the disease itself, but which is, in fact, only one of a class of symptoms, may have set in very early in the progress of the complaint; or on the other hand, may have only recently presented itself.

If it occur early, it must be considered as a warning of impending peril, though instances are frequently met with where it exists as a constitutional, or habitual ailment, not demanding serious attention.

Cough should never be overlooked, and when it displays itself at this stage, it cannot be considered otherwise than an important sign. It may be very slight, neither frequent nor troublesome, and unaccompanied by expectoration. It may occur only on the patient's getting into bed, and coming into contact with the cold sheets, or on his awaking in the morning, and commencing to breathe more deeply the morning air. It is termed a short *hacking* cough, and frequently passes unnoticed for a considerable time. It is sometimes attended to, and may be relieved by judicious treatment; but it is as frequently considered of too little consequence to require interference.

It is not always slight, but may occur in paroxysms of considerable violence, straining and distressing the patient exceedingly; then it receives the attention it deserves, and all the symptoms are taken serious and earnest cognizance of immediately.

There is as yet no expectoration, except of a small quantity of glairy fluid, from the bronchi, no more than would be seen after an accidental fit of coughing in a healthy person.

The signs up to this time are, for the most part, such as are commonly passed over by the patient or his friends; the medical attendant is not called in before they have not only existed for a considerable time, but perhaps more unequivocal, and serious symptoms have appeared, such as can only be thoroughly examined and weighed by a professional observer,—namely, the physical signs of incipient consumption, as indicated by the state of the lungs and heart.

This, unfortunately, in the great majority of cases, is the earliest period at which the physician is consulted; and much then depends on the quantum of strength still retained by the patient. At this period, a close and searching inquiry may be attended with advantage. The early examination of the various symptoms, of his genealogy, habits, and temperament, holds out, in many cases, a fair prospect of good being done, and it would be well if parents would not only take notice of the predisposing signs here enumerated, but go a step farther, and submit their fears, and the object of them, to a physician of skill, before the local pulmonary symptoms present themselves.

On the patient being examined under these circumstances, in addition to the symptoms already mentioned, the respiration is found defective; it is oppressed, more particularly after bodily exertion; the breathing is short and frequent. On removing the clothes, and placing the patient in an easy sitting posture, the whole chest, particularly the subclavicular regions, appears emaciated; the action of the intercostal muscles and ribs is found to be impaired; the rise of the chest, on the deepest inspiration, is but badly marked; the respiratory effort, such as it is, being evidently effected almost exclusively by the diaphragm.

On percussion, the sound is variable, for a difference, even at this early period, can sometimes be discovered between the two sides, one emitting a duller sound than the other, the left generally more so than the right. On applying the stethoscope, under the clavicles, a corresponding difference may be detected, but that is about all that can be said, the respiratory sounds being not only distinct, but more rough than natural.

Up to this time, consumption, in the strict medical meaning of the word, has not commenced; there has been no deposit of tubercle, as far as we can discover; and it is not too much to say that a well-directed course of treatment, from this time, ought, under ordinary circumstances, to restore the patient to health.

In more marked cases, when the tuberculization is nearer at hand, the respiratory sounds present greater variation; the *inspiration*, instead of being soft and easy, is puerile, bronchial, or even amphoric, according to the intensity of the predisposition to the disease; while the *expiration* is short and indistinct.

The sounds emitted through the stethoscope, indicate a dryness, an absence of mucus, or any other fluid, in the bronchial tubes.

With these signs, some authors, Laennec, Louis, and others, consider tuberculization to have commenced; others are found, however, to entertain doubts on this head. Louis goes so far as to say that, "tuberculization commences from six months to two years before its announcement by cough, or any obvious pectoral symptoms."

All agree that in this stage there exists great hope of the development of the disease being prevented.

Fournet paid particular attention to the earliest phenomena of consumption: he makes a *scale* of the respiration; the *intensity* of the inspiration amounting to 12 at this stage, instead of 10, as it would do in health, while the *duration* of the respiration amounts to only 8 or 7, instead of 10,—taking 10 as an arbitrary standard in either case.

This author considers these changes in the respiratory function as synchronous with the first tuberculous deposit. Whether that be the case or not, it is of the first importance to know that they accompany, or immediately precede consumption, in almost all cases. The stethoscope gives but little information, either of the approach of the disease, or even of its earliest symptoms, as far as tubercle is concerned. The irregularities in the respiration, therefore, should engage our immediate attention, and be taken collectively with the other signs already described, in forming our diagnosis of the case.

Emaciation is certainly the most constant, if not the invariable attendant on consumption, from the outset, and during the progress of the disease. According to Louis, it is the most important symptom. It appears to involve the lungs especially, as it does the parietes of the chest; robbing the whole respiratory apparatus of its substance and strength, and rendering it attenuated. This is the cause of the respiratory sounds being louder and rougher, than if they came through a more dense and solid tissue,—of the puerile respiration, so called.

We know that as tuberculization proceeds, the air-cells, and even tubes, become compressed and obliterated, so as to entirely destroy the function of the part. The lung, in fact, has become solidified, and of course all respiratory sound ceases; this would seem to confirm the opinion that the louder sounds precede, rather than accompany, the morbid deposit.

There are still indications, which though trivial in themselves, when taken with others already detailed, constitute a tolerably certain foundation for sound opinion.

The progress of emaciation in a young person, if it may be so called, even though unattended by any positive signs of disease, I hold to be of itself an alarming symptom. It frequently precedes for some years the development of consumption. It is insidious, creeping on by slow and almost imperceptible degrees; unaccompanied by pain, or any other inconvenience to the person, it is unfortunately thought of too lightly. If inquiry be made, the probability is, ground for apprehension will be detected. The digestion may be defective; the food may not afford nourishment to the body; the assimilating function may be at a standstill; and yet these important facts may be overlooked.

Another blind to common observers is the absence of pain. This of itself is a sign of deep importance. It is almost a positive mark of the character of the disease, of the existence of tubercles in the lungs. These organs are far from sensitive, they are not liberally supplied with nerves of sensation; they bear extremes of heat and cold, and even mechanical injury, without betraying such disturbance in their ordinary duty as might *a priori* be expected. So, when loaded with obstructive masses, as tubercles become, they cause no pain; the respiratory function proceeds, doubtless under great difficulty, but bodily suffering does not form a part of the evil.

There is an unnatural sense over the body generally as regards heat and cold. One person complains of always feeling chilly, particularly in the hands and feet; the countenance is pale and livid; no quantity of clothing seems sufficient to keep up the warmth of the body, or to counteract the sensation of cold. Another suffers from perpetual heat: a burning feeling pervades the whole system; no weather is too cold for him; he prefers being lightly clad; the hands and feet are constantly in a state of clammy perspiration.

These two opposite morbid states may be connected with the temperament of the person, but they present themselves conspicuously during the predisposition to consumption. Whichever state prevails, the person is very susceptible of, and suffers much from, catarrh and bronchitis, no sooner getting rid of one attack but he is seized with another.

It is not unusual with persons in health, in the morning, on their first rising, or on their going out of doors, to expectorate some slate-coloured mucus, a small mass, perhaps not larger than a bean: this, which is a secretion of the bronchial glands, and which sinks in water, generally disappears in persons predisposed to consumption, and instead thereof, a white mucus is thrown off. The same change occurs in bronchitis—the grey expectoration gives way to a mucous, or muco-purulent discharge.

Sometimes the bronchial glands themselves are the depository of tuberculous matter, which occurs more frequently in children: no grey expectoration then appears. This morning secretion, as it may be called, does not require the effort of coughing to throw it off,—it comes away spontaneously. It not unfrequently happens that persons unacquainted with the nature and quality of this dark-coloured phlegm, are puzzled, and consider its appearance as ominous of evil.

Taking any of these predisposing signs singly, but little inference can be drawn therefrom; but taking them collectively, they form a strong ground for apprehension of the approach of consumption, and that at an early period, varying, however, in point of time, according to the means adopted to arrest its progress.

Emaciation, susceptibility to bronchial catarrh, mental lassitude, failing of bodily strength, shortness of breath, weakness of sight, falling-off of hair, frequent perspirations, occasional palpitations, unsatisfactory state of the digestive organs and alimentary canal, are, then, the train of harbingers of evil; and when these are based on an hereditary predisposition, and where they are accompanied, moreover, by other warnings, already described, no time should be lost in having recourse to prophylactics, in the strictest sense of the word. And fortunate is he who, being cautioned as to his fate, is able to command the means most likely to insure his restoration to health; for the difficulties in the way, particularly as regards change of country and climate, are in most cases difficult of attainment, if not altogether insurmountable.

In the midst of these perils there is one remarkable feature, namely, the serenity of mind, the tranquillity with which the supposed victim surveys the danger that surrounds him; the very antithesis of hypochondriasm prevails, and calm undisturbed dignity often marks the countenance, and tempers the conversation. Nothing like fear is betrayed at the approach of fate; but a prospect full of hope and happiness for the future, is ever before his eyes.

If misgivings are expressed by friends, he does not share in them; if warnings are whispered, he does not regard them; and even if the disease have fastened itself on him, his equanimity does not desert him, now balanced between hope and resignation.

How different from the moral condition in many other bodily trials, where fear, apprehension, grief, despondency, alternately fill the breast, and the tenacity of life grows stronger in proportion as the chances grow less. For what purpose, we may ask, is this difference? Why is the worm of consumption permitted to creep in and destroy, in a manner so mysterious? The eagle, arrested in his flight, recognizes in the fatal arrow a feather taken from his own wing; but this scourge is beyond our ken.

The hypochondriac, ever clutching at disease, lives in wretchedness, but still lives on; whereas, in this insiduous disease, patience never droops, and hope scarcely takes wing ere the eyes are closed for ever.

CHAPTER III.

EXCITING CAUSES.

The exciting causes of consumption may be thus enumerated,—

Climate.
Exposure to cold and wet.
Traumatic, mechanical injury to distant parts of the body.
Occupation.
Mental depression.
Frequent child-bearing, and protracted lactation.
Mechanical injury to the chest.
Contagion.

In this order, they are the most frequent excitants of the disease. They are called *exciting*, but they may, by slow and gentle application, be almost considered as *predisposing* causes.

It is no doubt true that thousands of persons are exposed to them, without suffering inconvenience in the respiratory organs; but when the chest is the weak part—as everybody *has* a weak part,—and often where a person is merely of a strumous constitution, the exposure to any of these influences is very likely to lead to the establishment of consumption.

On the other hand, a person having a strong predisposition to the disease may fall a victim to it, even though guarded most carefully from all or either of these causes.

CLIMATE.

Of all exciting causes, climate is the most common. A cold, damp atmosphere, whether arising from the geographical position of the place, the nature of the soil, the barometrical elevation, the propinquity of marsh lands, of tidal rivers, or even of the ocean itself, certainly conduces to the disease.

England, from its latitude, insular form, and variable climate, suffers from it in a marked degree.

It does not prevail in more northern countries, where, though the air is colder, it is drier; nor does it tell on the inhabitants of the south.

The humidity of the atmosphere seems to promote it more than cold; indeed, warmth does not appear to counterbalance moisture, for we find it prevail more where the atmosphere is warm and wet, than where cold and dry. Cold and damp together are unquestionably an exciting, if not also a predisposing cause.

These influences may be so strong as to subvert the most robust constitution, to undermine the general strength, and to damage the system to such an extent as, first to produce the predisposition, and then to call forth the disease into fatal action. They engender scrofula, and the lungs, being perpetually exposed to their operation, readily become the depositories of the poisonous matter; and the power that sowed the seeds promotes their development.

According to the experiments of Liebig, food is *fuel*, which, undergoing combustion in the animal economy, maintains the animal heat, the oxygen of the air supporting the combustion.

If the mesenteric glands, and the lungs, be in a state of tuberculization, the fuel cannot be introduced into the system; and if it did so, oxygen, in sufficient quantity, cannot reach it, to support the combustion.

This helps to explain the cause, in some measure, of the coldness of the extremities, the livid skin, and some other phenomena of the disease.

If we compare different countries, we shall see that *climate* is the cause of some places being free from consumption. It is rare in the East, and West Indies, at the Cape of Good Hope, the northern parts of Africa, the elevated regions of North, and South America, more particularly Mexico, and Quito, Finland, Lapland, some parts of Sweden, and many districts of Russia proper.

Tropical climates are, for the most part, free from it; the heat, and the rarefied atmosphere together, seeming to preserve the respiratory organs. If human beings, lower animals, or birds, migrate from such parts to England, for example, notwithstanding that they were free from all tendency to consumption in their own country, they are here but a short time before the lungs show signs of weakness, and eventually break down. Dr. Mühry, of Heidelberg, writing on Climatology,* ascribes the salubrity of certain places, as regards freedom from consumption, to the *elevation* rather than the *temperature.* He goes so far as to say, that tubercle is not met with, or very rarely indeed, at elevations of 4,500 feet above the sea, and upwards; and mentions several countries and districts, (those above mentioned amongst the number,) in confirmation of his statement. The island of *Marstrand*, near the coast of Sweden, "consisting of a single rock of granite, mixed with gneiss," is described as being entirely free from consumption.

---

* *British and Foreign Medico-Chirurgical Review, Jan.* 1859.

We have also the evidence of Mr. R. Martin, that consumption is extremely rare among the European troops stationed in Bengal.* The French military authorities say the disease is almost unknown among the troops in Algiers. M. Haspal reports that, among 1,480 men in hospital, there were but three afflicted with pulmonary disease! †

It will be necessary to recur to this branch of the subject in the course of this treatise.

We find consumption more common in some counties in England than in others; and if we compare all the circumstances, we shall see that it is *climate* which occasions the difference, for the most part. The close atmosphere of barrack-rooms, and ill-ventilated low lodging-houses, produces an artificial climate nearly, if not quite, as destructive as that which is indigenous to a place.

---

* On Influence of Tropical Climates.

† *Ibid.*

That this is one great cause, is shown by the fact that the English counties maintain their relative position, from year to year, in the scale of mortality from consumption.

Although many persons might be disposed to attribute the difference that is noticed to this cause or to that, there appears to be no rational means of accounting for it, but by a reference to the physical geography of the place.

In England we see the disease prevail in the south, as well as in the north; in agricultural, as well as in mining, and manufacturing districts; but we do not see it equal in low humid situations, as in those that are high and dry.

The rarefied atmosphere, with its bracing breeze, fortifies against consumption, while the damp, chilly flats engender it. The warm, balmy air of the south is, of itself, not sufficient to prevent it, unless it be also dry. The altitude of a place, indeed, with its soil, contiguity to inland waters, or to the sea, or distance from such influences, must be considered as the chief circumstance affecting its salubrity, in reference to consumption.

Cold and damp are admitted to be the parents of scrofula, and we generally meet with consumption in England, near water, whether it be in the north, or south of the island.

When the elevation is considerable, 4,500 feet, for instance, above the level of the sea, according to Mühry, the humidity, if there be any, is counterbalanced by the rarefied state of the atmosphere;

although near the sea, or banks of rivers, the air is assimilated to that of dry inland places.

It has been the practice to recommend a residence at the seaside for consumptive persons; but that is now pretty well exploded. The atmosphere there is always more or less charged with saline particles, and with humidity, both which are particularly injurious. Salt provisions are found to be unsuited to scrofulous persons; indeed, the constant use of them, without an admixture of vegetables or fruit, is found, as amongst seafaring persons, to be productive of serious mischief.

The complexion of fishermen, and others constantly resident at the seacoast, does not compare favourably with that of persons in a similar rank of life, who are employed in agricultural pursuits.

That a temporary residence near the sea, with or without sea-bathing, is useful and agreeable, in some cases, there can be no dispute: a change of air, scene, habits, diet, and occupation, which are embraced in the ordinary acceptation of a residence at a watering-place, is grateful to most persons; but it cannot be denied, that more benefit is often derived, under similar circumstances, at a *distance from* the sea. This part of the subject will be referred to when we come to speak of the treatment of consumption.

COLD AND WET.

Next to climate, exposure to cold and wet may be considered the most frequent exciting cause of consumption. However, as was just now said of climate, these may not of themselves produce the disease, if there be no predisposition thereto.

This is the prolific exciting cause in young men just arriving at manhood; and many are the instances in which parents look back to the *wetting* their son experienced some months previously, as the beginning of his now serious illness. The clothing becoming wet, either by exposure to rain, or by the person's falling into water, especially when he is compelled to remain inactive for some time immediately after, as by sitting in a boat, or open carriage, is most dangerous. It not unfrequently happens that a youth, in what was considered robust health, from an accident such as this, has declined rapidly, not only to the great grief, but to the surprise of his relatives and friends. The predisposition in the system is violently excited here, and the disease rapidly developes itself; the shock to the whole frame is the immediate cause of its accession, and proves that it is not merely a local malady, for it may happen, in such instances, that the lungs are not at all affected at first, but eventually give way, as being weaker than the other organs of the animal economy.

In the year 1845 I lost a friend in the manner here described. He was twenty years of age, of strong physical constitution, and great mental energy. He was sub-engineer on a trunk line of railway, in one of the midland counties, and on him principally devolved the responsibility, as well as the superintendence of the construction of a tunnel of considerable length. The work proceeded satisfactorily; he was in constant attendance on his work, spending sometimes whole nights, as well as days, in his tunnel, with the different relays of workmen. The perpetual exposure to cold and damp in the dreary vault began to tell upon him; he was, however, so absorbed in his occupation, that he scarcely heeded the cough with which he was attacked, nor his indifference as to food—for his meals were few and far between, his every thought was in his work. At the end of two years he had the satisfaction of seeing the fiery train shoot through, but his own career was rapidly drawing to a close.

He entered on his work a robust young man, full of life and vigour; at its accomplishment he was emaciated, cadaverous, and without a hope of recovery. Suffice it to say, a few more months saw him consigned to the tomb, one of the many victims to the bold spirit of adventure and enterprise that pervaded this country at that time.

TRAUMATIC.

Cases of *traumatic* consumption are not unfrequent. Accidental mechanical injury to some part of the body, not immediately connected with the chest, is by no means an uncommon exciting cause; indeed, it is much more so than is generally supposed. Immersion in cold water, and bodily injuries, occur, and persons some time after become consumptive; yet the subject has not been dwelt on, I consider, as it deserves.

It has been too much the custom to overlook the previous injury, in looking about for the exciting cause. That consumption may not only be the sequel to, but be absolutely called forth into active development by such cause, there can be no doubt. There may be no connection between the part injured and the lungs, yet the violence done to the one, falls fatally on the other, through the sympathy that prevails throughout the system.

It often happens that mechanical injury has occurred, and has been passed over — forgotten altogether, before any very palpable symptom of consumption has manifested itself. Then, and not till then, circumstances are traced back to the shock the health had sustained by the previous accident.

C. A., aged 20, was a young man, who had up to this period of his life enjoyed good health. He had had no pulmonary affection; he had not lost any of his family by consumption; nor had he any hereditary predisposition to it—both his parents were alive and well.

He was out shooting, and had just discharged one barrel of a double gun, when he placed the butt end of his piece on the ground, and proceeded to reload; placing his left thumb across the muzzle of that which was already loaded (a common practice with sportsmen, to prevent their putting the charge into the wrong tube), he had nearly completed the operation, and was in the act of ramming down the last wadding, when both barrels exploded: both his *thumbs* were shattered to pieces, but his hands and his person were not touched. Amputation of the phalanges and metacarpal bones of both thumbs was performed, at the joint, and the wounds healed kindly.

His system was, however, severely shaken by the accident, and surgical treatment rendered necessary, as may well be imagined. Before the surfaces were fairly skinned over, he complained of cough, of which little notice was taken, as he was supposed to have taken cold; but unequivocal symptoms of consumption displayed themselves, in the course of a month from the time the cough first came on, and he eventually sank, between six and seven months from the date of the accident.

Here was a remarkably instructive case of the system, primed as it were, for any exciting cause that might occur, setting up a disease that was to prove fatal to the individual. Without this casualty, the young man might have avoided his fate for many years; he might, indeed, never have been attacked by consumption.

A few years ago, a case appeared in the newspapers, of a boy dying from the effects of a severe flogging he had undergone, at a public school at Cheltenham. Much difference of opinion prevailed on the subject, for the boy certainly died of consumption, and to connect the flogging and the death, was the point. It was shown that he had never previously had any pulmonary disease whatever; that he was not predisposed to it by hereditary taint, or otherwise; but it was equally plain that immediately after the punishment, his health began to fail him, and very soon he died. There was little doubt that the flogging was really the exciting cause of the disease in this case.

In 1843, W. R., aged forty, was a solicitor in good practice, of thin, wiry, spare habit, dark hair, and sallow complexion; of very active habits, and accustomed to live well. He had pretty good health, except that he perspired profusely on slight exertion. He was somewhat nervous as to his health, and lived in great dread of being attacked by cholera, of which one of his brothers had recently died. Sitting by his fireside one November night (he resided a few miles from London), a person entered the room, and said a severe frost had set in. Putting a cap on his head, he walked out into his garden; descending a few steps, his foot slipped, he fell backwards, and dislocated one of his fingers. This was easily reduced, though he suffered much pain at the time, and for some weeks afterwards. Within three weeks of the accident, his health appeared to undergo a great change. His appetite failed him, profuse night-sweats came on, and troublesome cough. The finger got quite well, but consumption developed itself, of which he died just five months after the accident.

The exciting cause here was plainly the injury to the hand; so obvious was it, indeed, that both he and his friends used to say, he had never been well since the night he slipped down the steps.

There was no hereditary predisposition to consumption in this case, neither had he any premonitory symptoms of pulmonary disease, except the disposition to perspire somewhat too readily. His habits were prejudicial to health, some would say, inasmuch as he worked very hard in his profession, and then indulged freely in wine.

In July, 1846, a private soldier of the 7th Hussars, of the name of White, stationed at Hounslow, was flogged for misconduct. On his removal to the hospital, after having undergone his punishment, his back was dressed, and in the course of a week or ten days, he was sufficiently recovered to resume his regimental duties. Immediately after doing so, however, his chest became affected, his general health gave way, and he died within, I believe, a few weeks. At the inquest, much feeling and party spirit was exhibited, more on the question of corporal punishment generally, than on the merits of the particular case, the object of inquiry. The man certainly died, as was clearly proved, of pulmonary, if not of tubercular disease. The jury returned a verdict, that the flogging was the cause of death, which doubtless was the fact.

These cases, which came under my own personal observation, except the schoolboy and soldier, and hundreds of others recorded by authors, show how traumatic cases of consumption may occur, and how quickly the disease may run its course. In every such case, no doubt the chest is the weak part, and but for the exciting cause accidentally brought to bear, the person might never have fallen a victim to it.

In 1841, Miss B., aged 19, the only daughter of her father, who was a clergyman of the Church of England, had up to this time enjoyed good health. Her father, from over exertion in his calling, fell into bad health; he suffered exceedingly from dyspepsia, and palpitation, so much so as occasionally to interfere with his duties; indeed, more than once, he was obliged to sit down in the pulpit, in the midst of his sermon.

Influenza prevailed, with which he was attacked; and it was pretty plain that, unless the bronchitis were soon checked, it would go hard with him.

His daughter, the subject of this note, was his nurse, and was unremitting in her filial duties; so much was she engrossed with anxiety and apprehension on her father's account, that she greatly neglected her own health. The father sank; but some time before his death, she displayed, in her own person, evident signs of approaching consumption. It should be mentioned, that there was no hereditary predisposition in the family, nor had she lost any near relative from the disease.

Her cough, emaciation, quickened pulse, hectic flush, both rusty and red-streaked expectoration, all showed too plainly how matters stood.

Prompt and vigorous measures were immediately adopted, and with a favorable result.—(The case is referred to in another part of this treatise). Here the mental depression and bodily fatigue were obviously the *exciting cause.* It might possibly have been that, being constantly in the same room with her suffering parent, whose cough was incessant, and expectoration profuse, her respiratory organs experienced direct damage, from perpetually inhaling the same atmosphere—for it is not unreasonable to suppose, that the strongest lungs would break down under such circumstances. Indeed, we know from abundance of proof, lately furnished from the military reports, as well as from the returns from divers places, that close packing of inmates, and consequently foul air in houses, is one of the great causes of consumption wherever it is found to prevail; to say nothing as to *contagion*, the impossibility of which is far from being clearly established.

This young lady recovered, remained in good health several years, then went to South America, where, I afterwards heard, she died of consumption.

It is not uncommon, even in very old persons, to find, after death, tubercles that had been *sown*, as it were, but never *germinated;*—more than that, cicatrices and scars of extensive mischief, that had existed sometimes, indeed, to the suppression of more than half the lung; the person, in these cases, having died of some disease totally unconnected with the respiratory organs, showing how much is sometimes done by nature or art, or both combined, in arresting the progress of tuberculization.

Fistula *in ano* is not unfrequently a cause of consumption, or, at any rate, a forerunner and harbinger. It seems to act as a mechanical irritant, remote from the chest, and, perhaps, analogous to the traumatic causes just now enumerated.

There is a strong sympathy between this region and the chest, the immediate cause of which is far from being apparent. We know that both are particularly liable to become affected in strumous habits, and we know that a metastasis takes place, whereby the mischief is translated from one organ to the other. It is fistula in the chronic form, where the operation of freely opening has failed to induce nature to take on a healthy action, that most commonly is the prelude to consumption.

Cough may have attended from the first, or even before the fistula formed, or it may have supervened late; in either case pulmonary disease is to be apprehended, and sooner or later it developes itself in a form that is irresistible to medical aid. It is not meant to imply that fistula is always a forerunner of consumption—far from it: it is most frequently cured, and the person restored to health; but when the predisposition to consumption is strong, or there is a tendency to scrofulous deposit somewhere, the accession of this weakness near the *anus* is a most serious affair; instead of acting as a counter-irritant or diversion, it expedites the mischief in the chest, and the general strength sinks.

Occupation exercises a great influence on health, especially when there is a predisposition to pulmonary weakness. The General Registry does not give us the amount of mortality from each disease in separate trades and callings; "Deaths according to Occupation" is given, but not the different causes of death in each occupation.

There are seventeen classes of occupations; each of these is split into subdivisions, and these again into about 300 specific callings.

The annual mortality amongst males above twenty years of age, is about 2 per cent. The following are taken from the general list, to show the great difference which exists.

Annual mortality per cent. amongst males above twenty years of age, in certain professions:—

	Per cent.		Per cent.
Civil servants of the Crown...	1·6	Feather dealers ...	2·9
Soldiers at home ...	3·0	Farmers	0·3
Sailors do. ...	3·2	Labourers, agricultural	0·3
Lawyers	1·7	Do., undefined ...	8·0
Doctors	2·0	Grinders in metals	4·2
Priests	1·3	Licensed victuallers	3·0
Authors and artists	1·3	Millers	1·7
Actors	3·0	Silk weavers	5·6
Theatre attendants	10·0	Silk fancy-good manufacturers	10·0
Butchers...	2·0	Paupers	0 5
Cowkeepers	2·5	Prisoners	12·0
Combmakers	3·5	Vagrants	0·3

This return can scarcely be held as conclusive. We cannot reconcile the great disparity that appears to exist between *paupers* and *prisoners*, or between *agricultural* and *undefined* labourers. The designation of "*vagrant*," in obituary returns, is evidently very rare.

The table throws little or no light on the prevalence, or otherwise, of consumption, amongst different classes of persons, only the amount of mortality from general causes. It is to be regretted the causes of death *in each occupation* are not clearly specified.

The occupations of the people generally—that is, whether they are engaged in agricultural, commercial, trading, or manufacturing pursuits, do not exercise a very palpable effect on the amount of consumption.

The number of persons in Great Britain, employed in trade, commerce, and manufacture, is 16·5 per cent. of the whole population; in agriculture, 7·9 per cent.

The following ten counties may be considered as *manufacturing*, the average number of persons so employed in the kingdom being, as we have said, 16·5 per cent.

	Per cent.		Per cent.
Lancaster	28·1	Middlesex	20·0
York, W.	24·6	Leicester	19·2
Chester	23·5	Derby	18·9
Warwick	21·9	Stafford	18·7
Nottingham	20·6	Worcester	16·7

While the following ten may be called *agricultural*, the average number of persons in the kingdom so employed being, as we have said, 7·9 per cent.

	Per cent.		Per cent.
Lincoln	15·9	Wilts	14·1
Rutland	15·6	Bucks	14·0
Essex	14·8	Suffolk	13·9
Hereford... ..	14·6	Cambridge ...	13·9
Huntingdon ...	14·5	York, N.	13·8

On comparing these lists with the Table No. VII., in another part of this treatise, it will be seen that consumption does not prevail more in the manufacturing than the agricultural districts; though the latter have the advantage as regards longevity.

One would suppose that the invigorating influence of the atmosphere in which peasants mostly live, would secure them from consumption to a considerable extent, and probably it does so; but on the other hand, they are not so well fed, housed, nor clothed, as inhabitants of towns; and this it is, no doubt, which trims the balance between them. The diet of the agricultural labourer consists, in great measure, of vegetable food, of barley, or wheaten meal and potatoes, animal food forming but a scanty proportion of his daily sustenance.

Of the agricultural counties, Lincoln, Hereford, and N. York, have but little consumption, while Rutland, Essex, and Suffolk, have more than an average.

Two of the manufacturing, Worcester and Stafford, have less than any other part of the kingdom; while in Derby and Leicester, the disease prevails greatly.

So that it cannot be said, that one class is more exposed to it than another.

Other diseases of the respiratory organs, which make up a sum total about equal in amount to consumption, prevail less in agricultural districts; in Rutland and Hereford, for example, they amount to 13 and 10 per cent. of all deaths, in Lancaster and Worcester, to 14 and 13 per cent.

The Cornish miners, from the poisonous atmosphere in which they work, and from the custom of descending and ascending the deepest mines by means of ladders, are a short-lived race. There are about 20,000 men employed in these mines, which are of copper, tin, and lead; besides about 10,000 boys and girls, principally engaged on the surface. Some of these mines are more than 300 fathoms (1,800 feet) in depth. The shafts are narrow, and often not free from projections, rendering the clear perpendicular space insufficient to admit of the men being passed up and down without great danger. The ores are raised by caissons and chains worked by steam-power above, but the miners never venture by this conveyance. The men divide the day and night—for the workings of the mine are incessant—into three periods of eight, or four of six hours, there being either three, or four parties of men, to relieve each other. The atmosphere in which they work, ranging from sixty to seventy degrees in temperature, is loaded with carbonic acid gas, and nitrogen, to such an extent, that their lights cease to burn, and the men themselves are often compelled to quit their post, from fear of suffocation. It is not therefore to be wondered at that the men suffer from disease of the respiratory organs. They sink into the grave in great numbers, at ages varying from thirty-five to fifty; the chief immediate cause being pneumonia, asthma, bronchitis, hæmoptysis, and consumption.

To climb 1,800 feet, by perpendicular ladders, in a close, humid atmosphere, after a heavy spell of work below, is very trying; it occupies the strongest men half an hour to reach the surface. Here the occupation is obviously the cause of the greater mortality—but this is a peculiar case. If we look at the condition of the coal-miner, we shall find him generally a ruddy-looking, robust man, in the enjoyment of excellent health. The atmosphere of *his* mine, and the comparative ease with which he goes to and returns from his work, being very different from that of his brother miner in Cornwall. Neither does the superabundance of bituminous coal-smoke, in which he lives, exercise any prejudicial effect on him. Indeed, it is a question if this species of fumigation be not frequently conducive to health, however unpleasant it may be to the senses, in neutralizing the poisonous influences of malaria, damp, and fog.

Certain other occupations have long been known to induce consumption: close confinement, and long hours, in sedentary postures, in damp, ill-ventilated workshops; in clay soils, marshy lands, water-courses, and new buildings;—all these may be classed as causes partaking both of the predisposing and exciting character.

Study in a chemical laboratory appears to exercise a baneful effect on the respiratory and assimilating organs. The constant application to the investigation of the phenomena of nature, revealed by chemical experiment, and the consequent exposure of the student to deleterious influences, chiefly in the gaseous form, seems to be the immediate cause. No one can enter a laboratory without instantly experiencing a certain effect on the respiratory apparatus, occasioned by an effluvium or odour, arising from the analytical or other processes there carried on.

Hydrogen gas, sulphur, ammonia, chlorine, carbonic oxide, sulphurous acid, and the like, form a halo around him, and though his olfactories or other senses, may not be greatly offended at first, the constant exposure to these influences certainly goes to damage the health, and especially the pulmonary organs.

Scientific chemists are not generally long lived. I have known three instances in which they have fallen into consumption, or mesenteric disease, at from thirty to forty years of age. In neither case was there originally a tendency to scrofulous disease.

The occupation of a *printer* is extremely trying to a person of weak chest. Instances occur constantly of young men, engaged in that work, declining rapidly. The atmosphere arising from the wetted paper, the pernicious effect of the ink used—which emits ammoniacal gases and nitrogen, the perpetual handling or washing the leaden type, combined with the close, ill-ventilated apartments in which printing is often performed, all go to explain the cause.

Plasterers, and others employed in the interiors of unfinished houses; bookbinders, and persons engaged in trades in which mineral, animal, or vegetable dust is greatly produced, fall victims to consumption in considerable proportions, notwithstanding that there is no predisposition. From the latter cause, large numbers are affected: grinders in metals or minerals, and various silk manufacturers, are particularly prone to the disease, from the dust of their trades.

Damp and cold seem first to lay the foundation of the mischief, in many occupations, and it does not then require much more exciting cause to rouse the morbid condition into fatal action.

This part of the subject will be further considered when we come to speak of the treatment.

Mental depression, arising from severe disappointment or distress, is sometimes an exciting cause; but not so frequently of consumption as of a general decline of all the powers, moral and physical, when the person is said to die of "a broken heart." Still, mental affliction furnishes its share of victims to this insatiable scourge. Mothers, of delicate frame, predisposed to the disease, are frequently hurried onwards to their fate, not by bearing and suckling children, strictly speaking, but by the too rapid succession of the one, and the undue extension of the other.

Women who have borne children, are healthier and longer-lived than others; but when there is a predisposition to consumption, the too frequent calls upon their strength in childbearing, aids the development of the disease.

It not unfrequently happens, that all the signs of confirmed consumption are present during pregnancy, but are arrested in their progress—kept back, as it were, by the more powerful influence of nature's laws operating for another purpose—the development of a new principle of life; but the child is no sooner born than it reasserts its cruel demands, and the poor victim sinks apace.

Mechanical pressure on the chest sometimes proves an exciting cause. This may arise from occupation or from dress. The former need not necessarily be in itself unhealthy; but the posture and position of the body, usually maintained by persons engaged in it, renders it so.

The *leaning* position, in which draughtsmen, engravers, and some other artists are engaged while at their work, is, not unfrequently, productive of great mischief to the chest; so with shoemakers, tailors, and some other artificers.

In females, we sometimes find the whole system deranged, from tight-lacing, to the great peril of the circulating and respiratory apparatus. It must be confessed, however, that this does not operate as an exciting cause of consumption as frequently as might, *a priori*, be expected. Nature will put up with a great deal before she suffers any one organ to be destroyed by external causes. She is chiefly vulnerable from within, and so wounds, or other lesions, touching the lungs, formidable as they may at first appear, do not, where there is no predisposition, necessarily lead to consumption.

Tight-lacing is a dangerous practice; nevertheless, the fatal effects generally fall on the bowels, or other abdominal viscera. These, being subjected to continual pressure, having no cuirass or basketwork, like the chest, for their protection, become *agglutinated*, and incapable of doing their duty; inflammation supervenes—slowly at first, but, after a time, more rapidly,—indeed, the pernicious effects are often not taken heed of, until it is too late: sometimes the person is within forty-eight hours of her death before she makes complaint. I have myself met with three such cases, wherein the inflammation had not only produced ulceration, but perforation of the intestines.

We have instances of men being shot, and pierced through the lungs; of others who have had bulky obtuse substances forced through them, yet without fatal consequences. Such cases show plainly enough that consumption is of a general, not of a local, character; that it is not originally a disease of the lungs at all; otherwise the respiratory organs would not so readily recover from the serious injuries to which they are sometimes subjected.

The late Dr. Monro, of Edinburgh, used to relate the case of a patient, an officer in the army, who suffered from distressing paroxysms of cough, and constant difficulty of breathing, which were attributed, justly enough, to a bullet having passed through his chest, at the battle of Waterloo, eight or nine months previously, and the worst anticipations prevailed as to his fate. One morning, after a more than ordinary fit of coughing, he expectorated a piece of *scarlet cloth*, which had been carried into his lungs by the ball: from that hour he began to amend, and soon regained his usual good health.

A remarkable case is also on record, and pretty well known, of a man being transfixed by the end of a shaft of a cart, which passed completely through his lungs, and pinned him against a wall. On the wood being withdrawn—not without great difficulty,—he recovered; the end of the shaft was afterwards deposited in the museum of the College of Surgeons, in London.

These cases show that the lungs are not of themselves such delicate organs, but that they can, in a person otherwise healthy, bear with a good deal of ill-usage.

It is difficult to say if contagion can fairly be classed as a cause of consumption. Cases occasionally occur—as between husband and wife, two brothers, or two sisters, that, to say the least of them, are very suspicious. The atmosphere of a sick-room is always unhealthy; and the strongest and most robust persons soon suffer while in close attendance on invalids: how much more likely a delicate, similarly disposed temperament, a near relative, perhaps, would be, to become infected, it is not difficult to imagine. When febrile disease prevails in a hospital, the resident medical attendants and nurses are often among the first to fall victims.

Whether consumption is communicable by contagion or not, it would seem the acme of imprudence to place a young person, not perhaps in the best health herself, in close attendance on, or near another, labouring under the disease.

Speaking generally of the causes of consumption, Dr. Scott Alison, one of the physicians of the Brompton Hospital for Diseases of the Chest, gives a list of causes, assigned by patients themselves, at that institution, in 603 cases; it does not follow that they were always right in their opinion.

Cold and damp, given as cause in	336	cases
Hereditary disposition	19	"
Close air, gasiform and dust irritants ...	28	"
Pregnancy, miscarriages, and long suckling	14	"
Intoxicating drinks	12	"
Anxiety of mind	16	"
Possible infection	3	"

In the other cases, the causes assigned were various.* Hospitals are invaluable, especially for casualties, and for sporadic or insulated cases of disease; but to collect large numbers of persons, afflicted with epidemic disorders, fevers, erysipelas, cholera, or consumption, in one confined building or apartment, is depriving the poor sufferers of many chances of recovery. In one scale we have the interests of the patient, in the other the convenience of the public. But are these two antagonistic?—are they not identical? The quickest mode of arresting the progress of a plague is unquestionably the best. The same principle is applicable to individual cases of illness.

---

* *Medical Times*, July 31st, 1858.

The immediate removal of a case of typhus, from a close, confined court, is doubtless politic, in reference to the surrounding population; and it is only on this principle that receptacles for such can be justified. To crowd together persons labouring under any form of pulmonary ailment, is the very antithesis of wisdom. Look at the effects produced by the suffocating atmospheres of our barrack-rooms on the lives of our soldiers, as detailed at page 88.

Laennec, the eminent pathologist, and inventor of the stethoscope, though not of auscultation, spending most of his time in the investigation of the causes, phenomena, and treatment of consumption, himself at last fell a victim to it. The opinion prevailed, that the disease had been induced in him by his being perpetually exposed to its outward influences, emanating from the bodies of other persons. Dr. Lamaire contends that he fell a victim through inoculation; he says,—

> "Laennec, one day, sawing through some tuberculous vertebræ, injured one of his fingers. There formed in consequence, at the part, a little tumour, about the size of a cherry-stone, which was fixed in the thickness of the skin. In about eight days' time, the skin broke, and gave issue to a thin, yellow, firmish body, exactly resembling yellow tubercle. The wound healed rapidly, and Laennec never experienced any further inconvenience from it."

In this anecdote Dr. Lamaire finds a confirmation of his belief, that consumption is contagious, and that Laennec inoculated himself; for of the disease he unquestionably died.*

The great Morgagni, of Padua, was so convinced of consumption being contagious, that he would not conduct a *post-mortem* examination of a person dying of it, from fear of becoming infected by the poison.

There are few diseases that are not communicable by inoculation or contagion. Alibert and Biett, disputing this principle, subjected themselves to the influence of cancerous matter, and both suffered for their temerity,—both died of carcinomatous affections.

Numerous other examples of the same kind are on record. We have instances of diseases of a far less likely character than consumption being communicated by contagion, or something very analogous to it—how else can we account for hysteria, chorea, and even epilepsy, spreading in schools and public institutions? Moral diseases follow the same rule. "Evil communications corrupt good manners."

---

* *Medical Times*, February 12th, and December 24th, 1859.

CHAPTER IV.

GENERAL TREATMENT.

As consumption chiefly attacks those who inhabit localities that are low-lying, cold, and damp, more especially when they inherit a predisposition to it, it is obviously our first duty to counteract, as far as lies in our power, the influences of these first causes.

The lungs are themselves strong in proportion to their being of healthy development, to the capacity of the chest, and to the rarity of the air respired; they are soundest in the mountaineer, and weakest in the person placed in low levels, or in close, confined apartments.

Exercise of the respiratory organs, in a pure atmosphere, is, unquestionably, the most powerful means of rendering them, not only capacious, but healthy and strong, as is exemplified in the parenchymatous structure of the lungs of those birds that soar to a great height.

Animals living on mountains are found to have much larger lungs than those inhabiting valleys.

In the city of Mexico, which stands several thousands of feet above the level of the sea, consumption or other pulmonary complaints are rarely met with, unless among strangers who have recently taken up their abode there; the air being lighter, and more rarefied, the person requires largely-developed lungs, to supply the quantum of oxygen necessary for the proper nourishment or purification of the circulating medium, for the due combustion and production of animal heat, according to the experiments of Liebig; whereas, those who live in valleys have not occasion to inhale so large a quantity of air; nor could they do so, as their lungs become compressed by the density of the atmosphere.

The same results are met with in Quito, South America, which is 10,000 feet above the level of the sea.

It is thus important that a person predisposed to consumption should inhabit an elevated situation, with a bracing air.

The barometer indicates correctly the height, wherever situated; and it is judicious, when it is not otherwise easy of accomplishment, to ascertain whether a place be high or low, by means of this instrument; or it may be gathered from the reports of engineers, who have of late years surveyed the length and breadth of the land, with the theodolite, for railway purposes. The survey, in many cases, furnishes results widely different from what are anticipated, as to the elevation of a place. Much information is thus obtained from it, of the greatest value in the selection of a family residence. Many places are high or low, by comparison with the adjoining country. A place may have hills about it, streams running through it, appear low, in fact, and yet it may be high, when compared with districts no great way off; indeed, at the distance of only a few miles, there may be a navigable river, or the sea itself, relieving it of all superficial waters. Such a locality, intermediate in point of elevation, will often be found to suit a consumptive person better than either the hill-top or the seaside; if, added to the natural level of the ground, advantage have been taken in its drainage, the place will, beyond doubt, be found healthy.

A clay soil, with defective drainage, and a damp atmosphere, favorable to a certain species of vegetation, to the production of fungi and other parasitic growths, seems especially conducive to the development of consumption.

Allusion has been made to the mortality from consumption, among the animals and birds in the Zoological Garden, Regent's Park, London. The soil of this park and surrounding neighbourhood consists of a heavy, moist clay (the London clay), and over the surface very frequently rests a thick, white, damp fog, even when adjoining districts are free from anything of the sort. This, no doubt, is one great cause of the mortality among the animals, of which as many as fifty per cent. of those imported from tropical climates have been lost in a single year. This great loss is not experienced in other menageries, nor in the collections carried about the country for show.

Some persons naturally require a bracing air, others a relaxing climate; some a warm, others a cold; some a dry, others a damp, atmosphere.

Consumption does not predominate in very cold countries, any more than in hot. It appears almost indigenous where the atmosphere is cold, damp, and variable, and the situation low. Occasionally, however, patients give the preference to that which would appear least suitable; but this is the exception, for, to support the main strength of the system—one of the chief points in the treatment, it cannot be advantageous to send a person to a relaxing climate.

It has been usual to send persons in incipient consumption to the south of England, or of Europe; but the practice is all but exploded. We find from the mortuary tables, that consumption is the cause of death in Cornwall, in a *greater proportion* than in any other county in England, except two; and the mortality from it annually, in *proportion* to the *amount* of *population*, is greater than in any other, except one—Lancashire: and these are persons born on the spot, not strangers sent thither, in the hope of benefiting by the change. It is well known the climate there is always humid and warm, relaxing to a high degree, which accounts for the great amount of consumption.

The days on which rain falls in that county outnumber those that are fair, in the proportion of 189 to 176, whereas in England they are only 158 wet to 207 dry. The difference in the quantity that falls is still greater, namely, thirty-eight inches to twenty-five.

The following table shows the number of wet days, and the amount of rain in each of the quarters of the year, in Cornwall, England, and in London :—

TABLE I.

Number of Days on which Rain fell.

Quarters.	Cornwall.	England.	London.
1	61·3	48·3	50·0
2	33·3	39·6	35·0
3	34·6	32·5	33·0
4	50·6	38·0	28·0
	189·8	158·4	146·0

Quantities of Rain, in Inches.

Quarters.	Cornwall.	England.	London.
1	15·7	8·0	8·0
2	4·7	5·4	4·4
3	10·1	6·7	5·0
4	7·4	4·9	3·0
	37·9	25·0	20·4

The churchyards in Cornwall, especially at Penzance and Falmouth, are tenanted by large proportions of young persons, who have fallen victims to the disease, mostly "of this parish ;" the others having come from distant parts of the kingdom, in the vain hope of being restored to health.

The policy of sending consumptive persons to the seaside, may be said to have been weighed in the balance and failed.

Before leaving the subject of rain-falls, it may be observed that those districts or regions of the world, where the largest amount of water pours from the clouds, are not necessarily unhealthy. The extensive flats north and east of Calcutta, in the valley of the Brahmapootra, called the *sheels* of *Bengal*, are subject to perpetual inundations, from incredible falls of rain. They are covered with rank vegetation, and yet fevers and agues are rare; indeed, the country is perfectly healthy. In the single month of August, 1841, 264 inches of rain fell—twenty-two feet in depth, of which twelve and a half feet fell in five consecutive days; this astounding fact is confirmed by Doctors Hooker and Thompson, who measured thirty inches in twenty-four hours, and during seven months, above 500 inches. This terrific fall is attributed, by the author, to the proximity of the flats to the Khasia mountains.*

The air near the sea is always, more or less, impregnated with saline particles; and we know how irritating and injurious these are to persons suffering from cutaneous affections, connected with a scrofulous habit. This is an additional proof, were any wanting, of the impropriety of sending patients to such places, in whom there is the slightest tendency to this diathesis.

As one of the chief objects of this treatise is the prevention of consumption, more especially amongst our own countrymen, I propose taking a comparative view of the sanitary condition of the different counties. A great difference will be found to exist in the mortality, in the longevity, and in the amount of consumption that prevails.

---

* *Himalayan Journal*, by Dr. J. D. Hooker; 1855.—Also, *Edinburgh Review*, January, 1856.

First, as regards the mortality, we find, that whereas the average is twenty-two per 1,000 annually, some counties rise to twenty-three, twenty-four, and one even to twenty-eight; on the other hand, some favored districts lose only eighteen.

The cause of this is not, *primâ facie*, apparent. The manufacturing districts lose most, unquestionably, but there is a wide range among counties purely agricultural. Density of population, that is, a greater number of inhabitants to the square mile, cannot be charged with being the cause, notwithstanding that, at first, appearances would tend to such a conclusion. Lancashire and Stafford are most populous in proportion to their area; they have also the greatest general mortality; but the close confinement of persons in mills and workshops in these counties, is the real cause, as well as the practice of employing children at a very early age, in the various factories.

Gloucester is a thickly-peopled county, but the general mortality is not above the average. In those counties where there is a sparse agricultural population, it is lowest—witness Westmoreland, North York, and Rutland.

Table II. shows the population, density of population, and annual mortality in the several registration counties of England, and in Wales, 1841-1850.

TABLE II.

Place.	Population.	Persons to Square Mile.	Mortality per 1,000.
ENGLAND	17,927,609	307	22
Surrey—*rural*	202,521	272	18
Kent—*rural*	485,021	243	21
Sussex	339,604	229	18
Hampshire	402,016	242	20
Berkshire	199,224	225	20
Middlesex—*rural*	150,606	547	19
Hertfordshire	173,962	260	20
Buckingham	143,655	228	21
Oxford	170,247	227	21
Northampton	213,844	216	22
Huntingdon	60,319	188	22
Bedford	129,805	272	22
Cambridge	191,894	215	23
Essex	344,130	223	20
Suffolk	336,136	231	20
Norfolk	433,716	213	21
Wiltshire	240,966	197	21
Dorset	177,095	187	20
Devonshire	572,330	214	20
Cornwall	356,641	259	19
Somerset	456,259	288	20
Gloucester	419,514	375	22
Hereford	99,120	149	21
Shropshire	244,898	173	21
Stafford	630,545	534	24
Worcester	258,733	381	21
Warwick	479,157	501	23
Leicester	235,920	283	22
Rutland	24,272	144	19
Lincoln	400,236	147	20
Nottingham	294,380	314	21
Derby	260,693	298	21
Cheshire	423,526	391	23
Lancashire	2,067,302	1,003	28
West York	1,340,051	508	23
East York	254,352	222	24
North York	194,644	100	19
Durham	411,679	349	22
Northumberland	303,568	154	22
Cumberland	195,492	125	21
Westmorcland	58,387	76	19
Monmouth	177,130	262	23
South Wales	607,456	138	20
North Wales	404,328	131	20

Since these returns were made, the mortality has increased: in 1853 it was 23 per 1,000 annually in England.*

Next, if we look to the average duration of life, we observe a marked difference, especially in early youth.

In "England," take any number of boys aged five: 50 per cent. of these will live forty-four years longer; this is a constant unvarying rule—at least it has varied so little during the present century, as not to be worth mentioning, whereas in Hereford and Cambridge, both agricultural counties, they would range to fifty-eight and forty-four respectively; showing how much more favorable one place is than another, for the rearing of children. In "England," a man of twenty-five has the probability of thirty-four years' life before him, but in these two counties he gets forty-four and thirty-five respectively.

If we compare the manufacturing districts with "England," we find the value of life amongst children fearfully low: instead of forty-four years, they have only a prospect of thirty-seven or thirty-eight.

---

* See Registrar General's 16th Report, page 94.

NOTE.—The following Table has been calculated on the general registry returns for 1851 (see 14th Report, page 98). The life tables usually adopted are from the registry for 1841, which make the value of life in infancy and early youth rather higher than in 1851. The chief use of the Table (III.) is to show the *comparative* duration of life in the different counties.

TABLE III.

DURATION OF LIFE.

Average Duration of Life at the Ages of 5, 15, 25, 35.

Place.	At the Age of Five.		At the Age of Fifteen.		At the Age of Twenty-five.		At the Age of Thirty-five.		Average of four Periods.
	M.	F.	M.	F.	M.	F.	M.	F.	
ENGLAND	44	44	39	37	34	35·5	27	30	37
London	43	40	35	40	30	33	25	28	34
Hereford	58	55	50	48	44	41	42	35	47·8
York, North	57	56	50	49	43	44	35	37	46·8
Rutland	53	50	51	45	45	40	37	37	45
Westmoreland	52	52	48	45	40	40	35	34	43·6
Huntingdon	55	48	48	45	40	40	33	34	42·8
Devonshire	50	53	45	47	38	41	32	35	42·5
Dorset	51	50	47	44	40	40	34	35	42·5
Suffolk	50	46	46	44	40	40	35	35	41·8
Oxford	52	48	46	44	40	38	33	33	41·7
Surrey—*rural*	55	54	44	45	36	38	30	33	41·5
Norfolk	46	46	45	45	40	38	33	39	41·5
Buckingham	51	50	46	44	40	36	34	31	41
Wiltshire	51	46	46	41	40	34	33	29	41
Berkshire	53	52	43	45	36	40	30	33	41
South Wales	50	48	45	45	39	38	32	33	41
Somerset	49	54	45	39	37	38	30	35	40·8
Northampton	49	49	43	44	37	39	31	35	40·8
Shropshire	52	49	46	43	38	37	31	30	40·7
Lincoln	48	45	44	41	38	38	32	34	40
Cumberland	50	49	45	45	38	41	32	34	40
Leicester	51	45	45	42	39	39	32	31	40
Essex	48	48	43	43	38	38	32	32	40
Worcester	49	46	43	43	37	38	30	33	39·8
Sussex	52	49	38	41	37	37	31	32	39·6
Gloucester	46	48	42	44	35	39	30	33	39·5
Hertford	48	48	43	42	35	38	31	33	39·5
York, East	48	49	41	43	35	37	29	33	39
Kent—*rural*	50	52	40	40	35	37	30	32	39
Derby	49	48	44	38	38	34	31	29	39
Bedford	47	42	43	42	39	35	34	28	38·8
Cornwall	45	49	42	47	37	42	29	35	39
Hampshire	50	51	39	43	34	37	34	32	39
Middlesex—*rural*	48	48	41	45	35	38	28	27	38·7
Nottingham	48	46	42	41	36	36	30	31	38·7
Northumberland	46	48	40	42	33	38	30	32	38
Cambridge	44	43	40	39	35	36	30	32	37
North Wales	38	41	36	45	34	37	30	33	36·7
Durham	40	42	37	39	33	34	31	30	36
Cheshire	38	39	38	37	33	32	28	27	35·8
York, West	39	41	38	39	33	33	35	29	35·7
Warwick	43	43	37	39	31	36	26	30	35·5
Monmouth	38	40	35	39	32	35	28	39	35·5
Stafford	42	41	37	37	32	34	27	29	34·7
Lancaster	37	37	33	32	28	28	23	25	30

N.B.—The average of the four periods is not the average number of years a person may live, but a comparative view of the value of life in different places.

Mr. C. W. Willich suggests the following ingenious method of expressing the value of life; viz., to take two-thirds of the difference between the age of the person and eighty. Thus, a man aged twenty has forty years' expectation, forty being two-thirds of sixty—the difference between twenty and eighty. So, a child of five has fifty years' expectation, by the same rule, and a man of sixty about fourteen.*

The amount of longevity also differs greatly. In England, out of every 1,000 persons, about 100 reach to *seventy-five*, and twenty-five to *eighty-five* years of age.†

In Rutland, Hereford, and North York, there will be found one hundred and eighty-five of the former and fifty-four of the latter. Whereas in the manufacturing districts the numbers fall to seventy and sixteen.

In Lancashire old people are very scarce, only 5 per cent. of the population reaching *seventy-five*, and not 1 per cent. *eighty-five*. The actual numbers are fifty of the former, and only nine of the latter per 1,000.

Equanimity tends greatly to longevity. Where contentment reigns, and calm repose is the lot of the octogenarian, people live on to an extreme old age, in far greater numbers than when anxiety clogs the pilgrim's steps, and excitement ruffles his serenity.

---

* *Athenæum*, February 12th, 1859.

† Extracted from the Obituary Register.

A curious exemplification of this is found in the difference that displays itself between those whose *lives* are *assured*, and those *living* on *annuities*. The former have a certain amount of care pressing on them in their anxiety to keep up their annual premiums, while the latter are entirely exempt from all thought about the matter. Observe the result: those who are assured seldom reach to the age of 100; whereas annuitants arrive at that period in considerable numbers,—verifying the proverb put forth by certain poets, Lord Byron among the rest, that annuitants *never die*.

TABLE IV.

LONGEVITY.

Amount of Longevity in the different Counties of England. Number of Persons per 1,000* *reaching the Ages of* 75 *and* 85.

Place.	Seventy-five.		Eighty-five.		Persons to Square Mile.
	M.	F.	M.	F.	
ENGLAND AND WALES	88	110	20	29	307
Rutland	227	201	51	53	144
North York	161	196	42	64	100
Hereford................	151	178	48	65	149
Westmoreland	181	146	50	63	76
Devonshire............	135	167	34	49	214
Dorset..................	132	164	31	43	187
Berks	134	157	34	44	225
Oxford	126	130	28	31	227
Shropshire	139	158	27	43	173

* Out of every 1,000 deaths.

TABLE IV. (*continued.*)

Place.	Seventy-five.		Eighty-five.		Persons to Square Mile.
	M.	F.	M.	F.	
Suffolk............	138	147	36	45	231
North Wales	121	155	31	43	131
Cumberland............	118	159	29	45	125
Surrey—*rural*	130	148	25	37	272
Somerset	120	154	33	43	288
Norfolk	125	143	32	40	213
Wilts	134	145	27	30	197
Huntingdon	139	130	31	32	188
Essex	122	134	30	38	223
Lincoln	123	141	26	35	147
Hertford	118	140	27	53	260
Middlesex—*rural* ...	109	153	17	40	547
Kent—*rural*	109	137	25	37	243
Cornwall	104	145	24	37	259
Hampshire	119	133	24	33	242
Buckingham	119	132	23	30	228
Gloucester	103	138	26	38	375
Northampton	108	134	27	37	216
Northumberland......	102	126	30	34	154
Worcester	104	122	27	34	381
Leicester...............	111	117	25	25	283
Bedford	118	107	18	22	272
Sussex..................	118	122	25	23	229
Derby	103	109	22	26	298
Cambridge	95	115	21	29	215
East York	87	108	19	33	222
Monmouth	81	108	20	37	262
Nottingham............	89	106	20	21	314
South Wales	91	127	30	53	138
Durham	68	97	27	34	349
Cheshire	70	78	18	19	391
Warwick...............	65	75	13	24	501
West York	66	77	13	18	508
Stafford	62	75	15	17	534
Lancashire	44	56	8	10	1003

As has been already stated, *density* of population, in a given space, say, in a square mile, has not so great an effect in lowering the value of life as crowding many persons into close apartments.

We find a remarkable proof of this in the different rate of mortality in different towns. Subjoined is a table of *town districts;* by this it will be seen that the metropolis, with its two and a half millions of inhabitants, suffers, on the whole, less than Liverpool, Manchester, Bristol, and even several small seaport towns.

Were density of population the cause, the metropolitan districts of the *Strand*, and of *St. James, Westminster*, should be amongst the very worst places in the whole kingdom to live in, whereas the mortality here is not above the average. Crowded habitations, in the proximity of rivers, or of tidal waters, are the places where we find the greatest destruction of life, and this effect is brought about chiefly by the damage done to the respiratory organs.

TABLE V.

MORTALITY.

Population, Density of Population, and Annual Mortality in certain Registration Town *Districts.*

Place.	Population, 1851.	Persons to Square Mile.	Mortality per 1,000.
ENGLAND	17,927,609	307	22
London	2,362,236	17,678	25
Kensington	120,004	8,445	19
Chelsea	56,538	35,357	26
St. George, Hanover Sq.	73,230	38,376	18
Westminster	65,609	42,596	27
St. Martin-in-the-Fields	24,640	51,968	24

TABLE V. (*continued.*)

Place.	Population, 1851.	Persons to Square Mile.	Mortality per 1,000.
St. James, Westminster	36,406	144,068	22
Marylebone	138,696	62,362	24
Hampstead	11,986	3,137	18
Pancras	166,956	34,914	24
Islington	95,329	15,453	19
Hackney	58,429	8,201	20
St. Giles	54,214	141,722	27
Strand	44,460	161,556	22
Holborn	46,621	148,705	26
Clerkenwell	64,778	102,344	24
St. Luke	54,055	151,104	25
East London	44,406	175,816	26
West London	28,790	136,311	31
City of London	55,932	82,472	20
Shoreditch	109,257	95,450	28
Bethnal Green	90,193	69,171	26
Whitechapel	79,759	118,942	29
St. George, East	48,376	118,158	29
Stepney	110,775	51,287	25
Poplar	47,162	8,585	25
St. Saviour, Southwark	35,731	87,944	33
St. Olave, Southwark	19,375	70,748	24
Bermondsey	48,128	38,640	28
St. George, Southwark	51,824	111,737	30
Newington	64,816	61,242	26
Lambeth	139,325	20,341	25
Wandsworth	50,764	2,434	19
Camberwell	54,667	6,967	24
Rotherhithe	17,815	11,457	28
Greenwich	99,365	10,706	27
Lewisham	34,835	1,075	17
Kingston	26,783	722	18
Gravesend	16,633	6,708	25
Canterbury	14,100	2,984	24
Hastings	21,215	822	18
Brighton	65,569	15,480	21
Alverstoke	16,908	1,864	29
Southampton	34,098	7,446	23
Winchester	13,898	2,079	24
Reading	22,175	2,839	24
Edmonton	45,298	603	19

TABLE V. (*continued.*)

Place.	Population, 1851.	Persons to Square Mile.	Mortality per 1,000.
Oxford	32,322	1,241	23
Northampton	33,857	949	24
Cambridge	27,815	4,820	23
Yarmouth	26,880	10,801	23
Norwich	20,530	9,621	24
Salisbury	8,930	12,280	28
Exeter	32,833	11,402	25
Plymouth	52,221	17,368	25
East Stonehouse	11,979	18,028	29
Redruth	53,628	807	20
Bath	69,847	1,466	24
Bristol	65,716	22,606	29
Clifton	77,950	1,560	23
Gloucester	16,015	14,196	26
Cheltenham	44,184	1,086	20
Hereford	11,156	29,23	29
Shrewsbury	23,104	792	26
Worcester	27,677	2,080	24
Birmingham	173,952	37,554	26
Coventry	36,812	3,955	27
Leicester	60,642	9,010	27
Lincoln	20,756	405	23
Nottingham	58,419	19,082	26
Derby	43,684	8,480	24
Macclesfield	37,956	1,618	30
Liverpool	258,236	69,368	36
Bolton	114,712	1,547	27
Manchester	228,433	10,664	33
Oldham	86,788	3,019	26
Preston	96,545	817	25
Halifax	120,958	1,421	22
Leeds	101,343	28,965	30
Sheffield	103,626	5,709	27
York	47,648	727	25
Hull	50,670	16,082	31
Durham	35,878	466	24
Houghton-le-Spring	19,564	704	20
Newcastle	89,156	7,254	27
Carlisle	28,567	1,421	27
Merthyr Tydfil	76,804	368	28
Swansea	34,862	1,071	20

That towns exhibit a higher rate of mortality than rural districts, has been long known; but it is not large towns, as a matter of course, that suffer most, or, Alverstoke, East Stonehouse, and Salisbury, would not stand so low, nor St. George, Hanover Square, London, and the Strand, so high in the scale.

A sanitary commission was issued in 1858, to inquire into the health of the army, in England. From its report, it appears that, whereas the annual mortality among the same classes and ages of civilians was 9 per thousand, it was 11 in the household cavalry, 13·3 in the cavalry of the line, 18·7 in the infantry of the line, and no less than 20·4 in the foot guards. The greater mortality was caused by pulmonary disease,—the cavalry losing 7·3 per 1,000, the artillery 8·7, the infantry of the line 10·2, and the foot guards 13·8; while among a corresponding body of civilians, the deaths from such causes amount to 4 per 1,000 only. The cause of this great mortality is unhesitatingly ascribed to the close and confined barrack accommodation.

The following table shows the proportion of town population in certain districts, the general mortality, the amount of pulmonary disease, and of consumption in particular, in each. From this it will be seen that towns do not invariably suffer more than country districts; in fact, there are many remarkable instances, wherein consumption is more prevalent in the latter, the causes probably being local, dependent on climate, soil, or occupation of the inhabitants. In two of the districts in the table, which are situated in the far west, in both which a large proportion of the inhabitants are "rural," Penzance and Redruth, in Cornwall, the mortality from consumption is very high, much above the average of the kingdom. The latter is the centre of the mining country of copper and tin. The inhabitants may suffer somewhat from that cause, though it has not been found, from the evidence of the medical men on the spot, that the miner's occupation leads, as a matter of course, to consumption. Indeed, pulmonary complaints, taken altogether, are not more prevalent here than elsewhere, though consumption itself is more so. At Penzance there are not many mines; the population is chiefly agricultural, and fish-taking. The number of persons employed in the mines in Cornwall is not more than 10 per cent. of the whole population of the county; yet 148 deaths, in every 1,000, are caused by consumption, while, in the kingdom generally, the proportion is 124; showing that, to the climate, chiefly, must be attributed the great difference.

The districts of Alston, in Cumberland, and Leek, in Staffordshire, though having but small town populations, lose large numbers from this disease. The cause, no doubt, lies in the fact, that the people in the former are extensively employed in *lead works*, while, in the latter, they are crowded in factories, engaged in the weaving of silk.

TABLE VI.

PULMONARY DISEASE.

Average Annual Proportion of Deaths per 100,000 *Persons, from all Causes, from all Pulmonary Affections, and from Consumption, in the several undermentioned Divisions and Registration Districts of England and Wales, during the period* 1848-54.

Per-centage of Town Population.	District.	From all Causes.	From all Pulmonary Affections.	From Consumption
50	England and Wales	2,200	552	282
100	London	2,500	670	289
44	South-Eastern Counties	2,000	486	267
28	South-Midland ,,	2,100	481	263
31	Eastern ,,	2,000	502	289
36	South-Western ,,	2,000	483	246
51	West-Midland ,,	2,200	566	261
30	North-Midland ,,	2,100	482	272
63	North-Western ,,	2,700	683	339
45	Yorkshire	2,300	529	277
44	Northern Counties	2,200	463	243
29	Monmouth and Wales	2,000	508	323
22	Abergavenny	2,500	633	248
22	Aberystwith	1,800	458	374
11	Alcester	2,100	567	280
29	Alston	2,000	687	358
74	Aston	2,100	585	224
0	Basford	2,100	542	304
33	Bedford	2,300	474	287
27	Belper	2,100	512	304
49	Berkhampstead	2,200	530	273
29	Bideford	1,700	383	173
100	Birmingham	2,600	768	297
58	Blackburn	2,500	721	381
0	Blofield	2,000	434	238
0	Bootle	1,600	304	225
57	Bradford, Yorkshire	2,500	607	319
100	Bristol	2,900	851	364
17	Bromsgrove	2,200	571	291
0	Builth	1,600	405	291

TABLE VI. *(continued.)*

Per-centage of Town Population.	District.	From all Causes.	From all Pulmonary Affections.	From Consumption
28	Carnarvon	2,000	530	374
16	Chesterfield	2,100	478	292
84	Charlton	2,500	685	327
100	Coventry	2,700	615	262
0	Cranbrook	1,900	417	260
93	Derby	2,400	641	360
63	Dudley	2,500	541	165
0	Easington	2,000	242	134
100	East Stonehouse	2,900	719	307
92	Ecclesall Bierlow	2,200	652	305
29	Farnham	1,800	513	217
0	Garstang	1,600	406	309
53	Gateshead	2,500	539	253
0	Glendale	1,500	216	144
100	Gravesend	2,500	595	276
28	Halifax	2,200	555	303
0	Haltwhistle	1,600	368	292
20	Hemel Hempstead	2,000	417	203
0	Hendon	1,700	403	214
39	Hinkley	2,200	627	314
0	Holsworthy	1,600	439	193
22	Holywell	2,100	527	339
16	Houghton-le-Spring	2,000	378	184
25	Huddersfield	2,200	549	305
100	Hull	3,100	555	281
100	Ipswich	2,300	651	320
65	Kidderminster	2,200	560	284
30	King's Norton	1,700	489	199
33	Knaresborough	2,000	458	224
100	Leeds	3,000	766	289
38	Leek	2,100	646	445
100	Leicester	2,700	697	390
26	Leighton Buzzard	2,100	472	247
34	Leominster	2,200	412	220
37	Lewes	1,900	490	309
13	Liskeard	1,800	461	229
100	Liverpool	3,600	999	407

TABLE VI. (*continued.*)

Per-centage of Town Population.	District.	From all Causes.	From all Pulmonary Affections.	From Consumption
56	Luton	2,100	546	312
62	Macclesfield	2,600	748	421
81	Madeley	2,300	511	279
57	Maidstone	2,300	571	289
93	Manchester	3,300	859	385
69	Melksham	2,200	605	232
80	Merthyr Tydfil	2,800	657	409
98	Newcastle-on-Tyne	2,700	641	297
0	New Forest	1,700	473	280
14	Newport Pagnell	2,200	488	288
79	Northampton	2,400	549	313
25	North Witchford	2,700	504	277
100	Norwich	2,400	536	273
98	Nottingham	2,600	753	338
0	Pately Bridge	1,900	450	330
29	Penzance	2,000	505	327
100	Plymouth	2,500	610	233
100	Portsea Isle	2,500	617	285
75	Preston	2,500	772	374
0	Radford	2,200	668	330
25	Redruth	2,000	555	382
0	Reeth	2,000	626	218
29	Richmond, Yorkshire	1,800	426	205
40	Rochdale	2,400	609	345
0	Romney Marsh	1,900	352	183
28	Saffron Walden	2,100	566	309
97	Salford	2,800	734	301
76	Sculcoates	2,500	427	210
97	Sheffield	2,700	754	341
36	Spalding	2,200	477	197
52	Stafford	2,200	565	305
100	Stoke Damerel	2,600	605	267
95	Stoke-on-Trent	2,700	692	352
23	Stroud	2,100	510	248
67	Swansea	1,900	591	306
19	Towcester	2,200	525	293
45	Tynemouth	2,400	506	229

TABLE VI. (*continued.*)

Per-centage of Town Population.	District.	From all Causes.	From all Pulmonary Affections.	From Consumption
21	Ulverstone	1,800	441	256
0	Weardale	2,000	515	273
24	Wellingborough	2,200	491	318
76	West Derby	2,600	678	328
71	Whittlesey	2,500	458	273
50	Wigan	2,800	621	302
35	Wisbeach	2,500	494	248
68	Wolstanton	2,600	726	315
86	Wolverhampton	2,700	712	263
99	Worcester	2,400	596	319
16	Wrexham	2,300	553	280
30	Wycombe	2,100	496	277
28	Yeovil	2,100	563	285

We will now take the actual amount of consumption, as it exists in each county, amongst males and females. By the following table we find that, of every 1,000 deaths, 124 are caused thereby.

In a town or district, having a population of 50,000, the general mortality being 1,100 annually, 136 die of it every year, and females more than males, by 13 per cent.

TABLE VII.

CONSUMPTION—ENGLAND AND WALES IN 1851.

Amount of Consumption in every 1,000 *Deaths in each Sex, in the several Counties. Mortality from all Causes, and Mortality from Consumption, in Population of* 50,000 *Persons.**

Place.	Mortality from Consumption, per 1,000 Deaths.			Annual Mortality in Population of 50,000 Persons.*	Annual Mortality from Consumption in Population of 50,000 Persons.
	M.	F.	Average		
ENGLAND & WALES	116	132	124	1,100	136
Worcester	85	105	95	1,033	98
Durham	88	104	96	1,109	106
Stafford	83	111	97	1,253	121·5
Warwick	105	100	102	1,232	125·5
North York	98	115	106	895	94·5
Hereford	86	131	108	945	102
East York	95	123	109	1,112	121
Buckingham	90	130	110	1,033	113·5
Northumberland	104	120	112	1,020	114
West York	101	125	113	1,224	138
Lincoln	91	136	113	940	105·5
Devonshire	116	111	113	971	109
Middlesex—*rural*	117	111	114	1,160	114·5
Somerset	107	124	115	1,031	118·5
Monmouth	109	123	116	1,030	119·5
Gloucester	107	127	117	1,093	127·5
Wiltshire	105	132	118	1,041	122·5
Shropshire	110	128	119	1,027	122
Bedford	94	147	120	953	114
Northampton	102	139	120	976	117
Cumberland	114	131	122	1,003	122
Huntingdon	99	145	122	954	119
Oxford	99	145	122	1,072	130·5
Lancashire	111	135	123	1,323	162·5

---

* This return differs slightly from that of the ten years 1841-50. See the Registrar-General's 16th Report, p. 142.

TABLE VII. (*continued.*)

Place.	Mortality from Consumption, per 1,000 Deaths.			Annual Mortality in Population of 50,000 Persons.	Annual Mortality from Consumption in Population of 50,000 Persons.
	M.	F.	Average		
Cheshire	107	142	124	1,122	139
Kent—*rural*	115	137	126	958	120·5
Surrey—*rural*......	118	134	126	859	108
Nottingham.........	113	140	126	1,072	135
Norfolk	118	137	127	1,078	136·5
Derby	104	162	132	1,022	134·5
Cambridge	118	148	133	1,012	134·5
Westmoreland	133	133	133	908	120·5
Leicester	109	160	134	1,081	144·5
Dorset	106	163	134	938	125
Berkshire...........	128	145	136	1,000	136
Hertford	135	140	137	919	125·5
Essex	136	140	138	940	129·5
Suffolk...............	126	162	144	1,013	145·5
Sussex	133	157	145	950	132·5
Cornwall	157	140	148	1,061	157
Hampshire	151	149	150	974	146
Rutland	145	158	151	822	124
South Wales	157	167	162	1,054	170·5
North Wales	159	184	171	921	157·5

In perusing the table, some discrimination is necessary. A district may be healthy, that is to say, the annual mortality, from all causes, may be below the average, as in Hampshire, for example, and yet the amount of consumption great. In other words, consumption causes a greater proportion of the deaths here, than it does in less healthy districts, as Stafford and East York.

In Hampshire, out of every 1,000 deaths, 150, or 15 per cent., are produced by consumption;

whereas, in the two counties named—where the general mortality is high,—the proportion is only 10 per cent.

In many counties, indeed, the same fact is observed: where the deaths are few, consumption prevails, and *vice versâ*.

Warwick loses annually 1,253 instead of 1,100 (out of a living population of 50,000), but only 121 by consumption instead of 136. On the other hand, Cornwall loses only 1,061 instead of 1,100 on the general account, but 157 by consumption, instead of 136.

Taking the counties severally, Bedford is an average county, as regards the general mortality; consumption, however, is far more fatal among females than males, the rate being as three to two.

Berkshire loses a large proportion of its inhabitants by consumption, but the general mortality is low; the county is favorable to those advanced in life.

Buckingham is slightly better than the average, in point of salubrity; consumption is less fatal in it than in most counties.

Cambridge is not a healthy county; it is not conducive to robust development of frame in early life; and it loses more than an average proportion of its inhabitants from consumption.

Cheshire is low in salubrity; the mortality amongst children is great, and there are comparatively but few old; consumption carries off a large number of females.

In Cornwall, the general mortality is not great, but there is much consumption; more than a seventh of all deaths are caused thereby; and in proportion to the amount of population, it loses more by it than any other county in England, except Lancashire. Cornwall is one of the few counties in which more males than females fall victims to it. This can scarcely be ascribed to the miner's occupation; for, in the adjoining county, Devonshire, where there is very little mining, the same thing occurs. Children, however, thrive, and many persons, especially females, live to a great age.

Cumberland is healthy; the general mortality, and also that from consumption, being low. A large proportion of the inhabitants live to be old.

In Derbyshire, though the general mortality is less than the average, the value of life is low;* but few aged persons are to be seen, and those principally men. Bronchocele, goitre, or Derbyshire neck, attacks females, rather than males; and, as we might expect, judging from the close affinity that exists between the two diseases, many more females than males die of consumption—in the proportion of fourteen to nine.

In Devonshire people are strong, and long-lived; a large per-centage live far beyond three score and ten. Consumption claims but a moderate proportion of victims, and chooses men rather than women.

---

* "Value of life" means average duration.

Dorset stands high in point of salubrity: the general mortality is low; but consumption sweeps off large numbers of young females.

In Durham the value of life is low: children do not flourish, and people do not live the allotted term of years. The mortality is not greater than the average, but it falls heavily on the young, although from consumption the county is particularly exempt. Coal-mining, whatever other ailments it may produce, does not lead to this.

East York has a high rate of mortality; people do not live to a great age. It suffers but little from consumption, notwithstanding its exposure to the bleak north and east winds; but the inhabitants break down, from various causes, soon after passing the meridian of life.

Essex is somewhat more healthy than other counties, tested by the mortality tables; but consumption is rife, a large proportion of the deaths being caused thereby.

Gloucester is a trifle above the average in its freedom from consumption, and in amount of longevity. It is on a par, in other respects, with other counties.

In Hampshire, the annual mortality is low, and people live to a good old age, *if* they escape the one great scourge, consumption, in their youth. This, however, is more fatal here than in almost any other part of England, and more so amongst males than females, as is the case in Devon and Cornwall. The relaxing climate, tidal waters, muddy estuaries, and their concomitant fogs, tell fearfully on the young, before they have become casehardened, as it were. Three out of twenty of all deaths in Hampshire are caused by consumption.

Hereford is one of the most healthy counties; the value of life is high at all ages, particularly amongst children; there is much longevity, and but little consumption, especially amongst men. There are twice as many octogenarians in Hereford as in other counties.

In Hertford the mortality is low, and people live long. A large proportion of the deaths are caused by consumption, both among males and females. In a certain amount of population, however, there are not so many persons cut off by it annually as in most counties.

Huntingdon is favorable to children, and people generally enjoy good health; the mortality from consumption is high among females, but low among males, the proportion being as three to two, within a fraction.

Kent occupies a middle place as regards general salubrity. In proportion to its amount of population, it loses rather fewer from consumption, and from other causes, than do most counties.

In Lancashire, life is wasted. In England, the annual mortality is 22 per 1,000; in this county it is 28. Instead of 10 per cent. living to seventy-five, here we have only 5; and it is rare, indeed, to meet with an octogenarian. Consumption, however, is not *the* disease of the people—it is not the cause of death, in greater *proportion* than in other places; and were the young not worked to death in mills and factories, the county would probably stand pretty high, in point of salubrity. The confined dwellings of the lower classes, especially in Liverpool, Manchester, and other densely peopled towns, is one of the chief causes of the destruction of life.

In Leicester the annual mortality is on a par with that in the kingdom generally, but consumption is very destructive amongst females; in few counties are so many young women carried off by it as here.

Lincoln is a very healthy county; the mortality is low at all ages, and consumption takes but few males, compared with what it does in other counties.

Middlesex—*rural*, is healthy, but the mortality fluctuates with that of the metropolis. In the ten years, 1841 to 1850, it was considerably below, whereas in 1851 the mortality was rather above the average. Consumption is not prevalent. Females suffer less from it than males; indeed, a large proportion of the former live long. The population of this county is a mixture of persons, not only from all parts of the kingdom, but from all parts of the world. Its salubrity cannot therefore be estimated by the amount of mortality or of longevity.

In Monmouth the annual mortality is very great; persons are cut off prematurely, but not by consumption, which is less prevalent than in most counties.

North York is a highly-favoured district; everybody seems to enjoy good health; the general mortality is low; consumption is comparatively rare, and large numbers live to a great age.

In Norfolk people have a fair share of health, especially the young and old. Consumption, however, asserts its full claim.

Northampton is an average county; people live to a good age, but consumption is very fatal among females.

Northumberland has an average amount of mortality, but there is less consumption here than in most counties.

In Nottingham, children enjoy good health, but people are not long-lived; consumption carries off a great proportion of the females.

Oxford is favorable to healthy development in children; and people live to a good age. The annual mortality is less than the average; but of the deaths among females, a large proportion is caused by consumption.

In Rutland, the mortality is low, and the value of life high at all ages; twice as many persons reach old age (from seventy-five to eighty-five), as in other counties. Consumption would seem to be *the* disease of the district, a larger proportion of the deaths being caused thereby, than in any other county in England.

Shropshire is a healthy county; children thrive, and people live to great ages; the longevity is remarkable, especially among females. The mortality from consumption is considerably below the average.

Somerset is rather more salubrious than the majority of counties, both as regards the general mortality and the amount of consumption. The children are robust, and old persons strong.

Stafford is peculiar: the mortality is high, from specific causes, connected with the manufactures; children perish by wholesale, and there are no old, comparatively. Life is shortened in various ways, but not by consumption, which is seen less here, with one or two exceptions, than in any other county.

In Suffolk the annual mortality is low; young persons thrive, and there is much longevity; but, like many other counties similarly affected, consumption is the cause of death in a large proportion of cases.

In Surrey—*rural*, there is a mixed population, made up of immigrants: the children are strong, and a large number of persons live beyond three score and ten; the general health is good and the mortality extremely low; there is an average amount of consumption.

In Sussex the mortality is very low, but the proportion of deaths from consumption very high; this, at first sight, paradoxical fact, holds good as to several districts; the inhabitants being obnoxious to scarce any ailment but the *one*.

In Warwick, the term of life is very low: the young are cut off in great numbers, and few live to be old; but there is not much consumption. The diseases arising from factory life are the evils that prevail.

West York is much in the same position as Warwick; consumption prevails rather more.

Westmoreland is a very healthy county; the inhabitants are robust from their cradles, and nearly all live to be old. Consumption occurs somewhat less here than elsewhere.

In Wiltshire people have a fair share of health; there is not much consumption; a good many reach to seventy, but cases of great longevity are not numerous.

Worcester is remarkable for having less consumption than any other county, taking males and females together; the general mortality is also low, and there is more than the average of longevity.

Wales is healthy; the mortality being considerably below the average, and there is a great amount of longevity, especially among females. Like other healthy districts, however, it loses a large proportion of its inhabitants from consumption, more, indeed, than any other; one-sixth of all deaths being caused thereby.

In looking over this list, certain facts present themselves.

In some counties, where the annual mortality is lowest, the amount of consumption is highest, as in Rutland, Cornwall, Hampshire, and Sussex. On the other hand, where the annual mortality is highest, there the proportion of consumption is least, as in Stafford, Warwick, and East York.

Certain favored districts—North York, Devon, Lincoln, and Somerset,—escape both alternatives; while in no county do we find the two evils combined—a high mortality, and a predominance of consumption.

It is not easy to account for the difference that exists between counties apparently similarly situated. Why, for instance, should Rutland and Lincoln, two purely agricultural counties, contiguous to each other, the two highest, in fact, as regards the number of persons employed in that pursuit,—why should one have so much more than the average amount of consumption, and the other so much less? The same question may be asked in reference to West York and Leicester, two manufacturing districts, but widely differing in the amount of consumption that prevails in them.

The effect of certain occupations, which may bear on this question, will be spoken of hereafter.

Some counties favorable to youth—Rutland and Westmoreland, for example, in both which, especially the former, we meet with large numbers of aged people, — are prone to consumption. This seems paradoxical, but is, nevertheless, true. One is a flat, pasture county, the other altogether the reverse, being mountainous, and interspersed with romantic picturesque valleys.

The coal districts, and those in which kilns and potteries abound, enjoy a considerable amount of exemption. Has the carbonaceous principle pervading the air above, and the earth beneath, anything to do with it? These localities are not favorable to youth generally, nor can they boast of much longevity, as may be seen by the tables III. and IV., but from consumption they are remarkably free. If it be the smoke that protects Worcester and Durham, Stafford and Warwick, how is it the purely agricultural districts of North York, Hereford, and Buckingham dispute the palm with them?

Taking into account the average value of life, the amount of longevity, and the comparative freedom from consumption, the two counties of Hereford and North York stand pre-eminently above all others.

Rutland developes the greatest amount of longevity; there also a large proportion of persons pass through the earlier stages of life unscathed by any mortal disease, except the *one*, that one, however, is the avenger; consumption being the cause of death here in larger proportion than in any other county.

It appears, as might, *a priori*, be expected, that those districts which are most favorable to the healthy development of the physical powers in youth, suffer least from consumption. This may be taken as a general rule, but it cannot be denied that it admits of many exceptions.

Consumption being a disease of youth, and but little affecting those advanced in life, some persons, who are predisposed to it constitutionally, or are exposed to its local exciting causes, outlive both the one and the other; such persons may also stave off the maladies that beset age. It is a question if we could select a locality comparatively free from consumption, in which a family might pass their youth, and then migrate to one where the diseases of middle and old age are rare, with any chance of successfully securing the advantages belonging to each in succession. All the facts and inferences to be drawn from the foregoing tables go to prove that consumption is a constitutional malady, depending as much on hereditary predisposition, and impaired action of certain organs,—increased possibly by personal mismanagement, as from causes connected with any particular locality; and it therefore behoves us to look to the regulation of the health generally, as well as to the situation of a domicile.

The last remark is particularly applicable to females, who cannot compass the divers means of preserving health as men can do; as, for instance, in the event of foreign travel being recommended.

As the virtues are brighter, and the vices blacker, in the female, than the male sex, so it is with consumption, so with longevity—both prevail more among women than among men. They meet with more shoals and quicksands in commencing the voyage of life, and are swept away in greater numbers; but the survivors are rewarded, as it were, with greater length of days, and they pass their declining years in the haven of tranquillity and safety. The good and evil of life are more equally balanced than people suppose.

But it is not impossible, often not inconvenient, to exchange one residence for another, or even to go to the distance of a few miles, if it can be clearly shown that, by so doing, a person leaves a swampy, clay-soil district for one that is dry and invigorating; and it matters little, apparently, whether we quit the town for the country, or *vice versâ,* provided the physical characters of the two places are widely different. There is scarcely a county in England that does not offer some choice of residence, as regards high and low land—dry and damp; and many cases have come under my own observation, where the ravages of consumption have been arrested, by the family removing only a short distance from their former abode.

The advantages of this mode of proceeding are great, on the score of convenience and economy, as well as on more important grounds.

Certain houses are sometimes found to be unhealthy, though the neighbourhood generally is salubrious. A remarkable instance of this came under my own notice, at a town in the West of England. A family occupied a handsome house in the suburbs, surrounded by its own grounds and gardens, on an elevated situation, though the ground was still higher in the rear. The father, a son, and a daughter, died, in succession, of consumption, in the space of about three years. The widow and the remaining children, partly from a conviction that the house had had something to do with the cause, removed to another neighbourhood. Neither she nor any of her other children were attacked. The house remained unoccupied for nearly two years, having acquired a dubious character; it was then taken by a gentleman, whose family consisted, besides his wife, of five adult sons, and one daughter, all being in perfect health. Within two years of his taking up his abode in it, he lost three of his sons by consumption.

With the wreck of his family he fled from the place, and the plague was stayed, the disease did not reappear amongst them. This is a stubborn fact, and I leave others to draw inferences from it. It is scarcely necessary to add, that the house remained untenanted for very many years after.

In selecting a place of residence, the *springs* should be considered. If the water be *hard*, as it is called—holding lime, magnesia, or other earthy salts, in solution, it is very likely to disagree with invalids. Water thus impregnated, produces scrofula in whole districts in Switzerland, in Derbyshire in England, and at Rheims in France,—sufficient evidence to prove that such places are unfit, as residences, for persons predisposed to consumption. Water, on the contrary, holding iron in solution, including all chalybeate springs, is particularly suited to such subjects.

Whatever change is contemplated, provision should be made that the moral agents already mentioned should be kept in view. The feelings and dispositions of young people, not only from motives of kindness, but from the great influence they exercise on the health of the individual, should be studiously considered and ministered to.

In whatever situation, in point of climate, a person may reside, who is predisposed to consumption, it is of vast importance that he should live as much as possible in an uniform temperature. We are not likely to adopt, generally, the practice of the Russians, of having stoves in the entrance-halls and staircases of our houses, to secure one and the same degree of heat throughout them; but we may frequently, without trouble, provide suites of airy rooms for our patient: and this ought to be done, as a matter of the first consequence. A thermometer should be hung in every room, to make sure that an equable temperature is maintained; for we cannot always judge by our feeling whether or not the apartment be of the proper warmth.

Keeping an uniform temperature for weeks together, in the winter season more particularly, in the rooms occupied by a consumptive person, is one of the chief means of cure.

The windows should be air-tight, and in winter the rooms should be ventilated exclusively by the admission of air by the doors. Space, in every direction, should be provided, in length, breadth, and height; so as to admit, if desired, of indoor exercise of the body and limbs. It is desirable that the apartments should be contiguous to, and open into each other, and the patient must submit to be kept, for some time, in them, on his parole, not to quit them, or to ramble about the house; for the draughts of cold air, often encountered in staircases and passages, are extremely prejudicial to the invalid, even if only experienced for a few minutes at a time. Many persons have an idea that, if they put on extra clothing, they compensate for any inconvenience they may feel, by exchanging a warm for a cold room; forgetting that it is the cold air taken into the lungs that does the chief mischief; and there is no way of meeting this difficulty, except by keeping the different apartments of one uniform temperature. The thermometer in winter should stand at between 55° and 60°.

Two rooms, at least, should be devoted to the patient, and both kept at the same temperature. He should have the opportunity of passing from one to the other at pleasure. They should be frequently cleansed and ventilated. Of course, these operations are performed during his absence, and then only; for the dusting of a room occupied by an invalid, especially one suffering from pulmonary affection, is highly injurious: the dust penetrates into the bronchial tubes, and becomes the cause of serious irritation;—to say nothing of the offensiveness of the process.

The dust inhaled by artizans in certain factories, where needles, cutlery, glass, and silk are worked, is highly destructive of life. This is a warning to us that the subtle and pernicious agent should be guarded against.

If it be resolved to send a person abroad, it becomes a question of vital importance, to what place he should go. An elevated situation, where the atmosphere is dry, the climate warm, and the temperature uniform, possesses everything that is to be desired, as regards locality. Asia, Africa, and Central America, offer many countries to choose from. It has been customary to send patients to the shores of the Mediterranean.

Egypt, on account of its great dryness—rain or dew seldom falling there, has been found to afford powerful restorative aid; as have other countries in the North of Africa. Turkey, Greece, and Italy, have been much visited, but not with the same advantage as the more southern climes.

These countries are occasionally swept by other scourges—by plague, cholera, and by fevers of various type; but to consumption they are not prone. Minor plagues, supplied by the animal kingdom—as in the days of old Egypt, also prevail; these, however, may be guarded against.

In Algeria, the French surgeons find consumption a very rare disease among the troops. Out of 1,480 men in hospital, M. Haspal found but three afflicted with pulmonary disease; and only one death was caused by it out of 138 deaths. A general report gives but 13 phthisical cases, out of a total of 8,485 patients; and but 10 deaths from pulmonary disease, out of 871 deaths.*

---

* J. R. Martin, on "Influence of Tropical Climates," 1856.

There is a moral advantage in visiting these shores. Dr. Johnson says,—

> "The grand object of all travelling, is to see the shores of the Mediterranean; on these shores were the four great empires of the world—the Assyrian, the Persian, the Grecian, and the Roman; all our religion, almost all our laws, almost all that sets us above savages, has come to us from the shores of the Mediterranean."

As people have an object in taking a journey, it is well if that object be an agreeable one. Going purely for the sake of health, is not altogether pleasant; it is attended by too great anxiety, unless some collateral inducement can be thrown in. Here we have it, to the fullest extent. Where is the person that could sail over the deep blue waters of this ocean lake, reflecting brightly its azure canopy,—watch the joyous sea-birds, and the snow-white foam, sporting together, as it were, about the rocky isles, without feelings of soothing delight;—or visit the Sicilian vineyards, the ruins of Carthage, the site of ancient Troy, the remains of the Parthenon, the Pyramids, the tomb of the Saviour, besides innumerable other objects of interest, without the mind being filled with sensations of pleasure, far beyond the power of description.

These moral charms go a great way to counteract corporeal exhaustion; and, by agreeably possessing the mind, contribute substantially to the "grand object" of the patient's visit to this sunny clime.

A great deal may be written on the advantages of these countries, and others, similarly placed, as regards the latitude and physical characteristics;

but it is not practicable, within the limits of this treatise, to go very fully into the subject. It is obvious that to obtain full benefit from repairing to a foreign land, the change should be made promptly. The choice of the country must depend on various circumstances, and must in most cases be left to the convenience and to the decision of the patient and his friends.

At one time it was the custom to send consumptive persons to the South of France and to Italy. Whatever advantage was to be gained by repairing to these places, was only to be had by going early, on the first signs of predisposition; and, doubtless, much benefit has been derived from families going from England, and residing there for a period of years. It is, however, worse than useless to send a young person thither, who labours under confirmed consumption.

In most cases it hastens his fate. To send an invalid away, to spend the few remaining months of his existence in exile, far from his relations and friends, and finally to find a grave in a foreign land, is a cruel alternative, on which nothing more need be said. It has been found that more persons die of consumption at Marseilles and Montpelier, than in any other part of France. Drs. Pollock and Merryon go so far as to say that in Nice, Genoa, Florence, and Naples, more *natives* die of consumption than in cities and towns of corresponding size in England.

So much is the scourge felt in Rome, that a hospital, exclusively for the reception of consumptive persons, has been erected. All these places have a relaxing atmosphere; which, notwithstanding the warmth, is highly detrimental to persons predisposed to the disease. The same effect is noticed in all the southern counties of England — in every watering-place from Dover to Penzance; whereas, where the air is bracing, as in the elevated cities of Quito and Mexico, and in the inhospitable climes of Northern Europe, as has been observed, consumption is comparatively unknown. To the same cause may, no doubt, be attributed the small amount of consumption observable in the north-eastern districts of Yorkshire.

Sir J. Clark, in his treatise on "Climate," is extremely cautious in recommending patients to repair to the South of Europe. He is of opinion that it is a step in a wrong direction; especially when derangement of the digestive organs accompanies, or precedes, the pectoral symptoms of consumption. Even Madeira holds out no inducement to persons so predisposed.

The Cape of Good Hope, where mortality is at a minimum,—the healthiest part of the globe, in fact, holds out a tempting offer to invalids. We have, however, as yet, no statistic returns, by which we can weigh the advantages evidently possessed in a very large degree by that country.

Many of our countrymen seek their fortune in India. It might happen that a young man, strongly predisposed to consumption, whose brothers and sisters have either been carried off, or narrowly escaped destruction, is destined to go thither.

Fortunate for him, probably, if he follow his destiny. Exchanging the variable climate of England for the sunny plains of Hindostan may be the means of rescuing him from his impending fate.

There are two classes (says Mr. R. Martin) to whom the climate of Bengal seems genial. 1. The weak-chested, as they are called in England, who are of a scrofulous habit, but in whom pulmonary disease has not actually declared itself: these are saved by going to India. And I have known many persons in the curable stage of consumption, *i.e.* labouring under the preceding stage, or that of tuberculous cachexy, enjoy good health in Bengal, and survive their brothers and sisters at home. The fate of those, on the other hand, who go to the East, with suppurating tubercles, or even in the stage approaching it, is only precipitated. 2. Persons of phlegmatic habit, with dyspepsia, languid circulation, and cold extremities, seem to have better health there than in Europe.

But India is by no means free from consumption: it occurs both in Europeans and natives; more particularly the latter.*

Moral agencies, we know, have a powerful effect, and there can be little doubt, the gaiety and excitement of a military life, even under a tropical sun, might help a delicate young man over a critical period of his life.

Mr. Martin, speaking of the mortality among

---

* R Martin on "Tropical Climates."

British troops in India, states that, in the military hospitals—from 1825 to 1835—

Of Calcutta, out of 493 deaths, 9 were caused by consumption
„ Chinsurah, „ 332 „ 9 „ „
„ Berhampore, „ 763 „ 25 „ „

—and that, in the general hospital, in twelve years, 1,704 deaths occurred, eight of which were ascribed to consumption; but that more than half of these were probably occasioned by bronchitis.*

Dr. Burke states that, of 100 deaths occurring among British soldiers in Bengal, only 1·9 were caused by consumption, and only 4·6 by pulmonary disease of any description.

England has many colonies besides Hindostan, to which persons may migrate; no other country has such a choice, offering fair chances of preventing the development of the disease. There are also "foreign climes" in abundance, which might suit some persons' convenience to visit. But the same general rule applies equally to all; namely, that whatever is done, it should be done quickly—before the specific pulmonary form of the disease has set in.

Consumption attacks fair and dark-complexioned persons in about equal proportions. There is a circumstance connected with the former, visiting India, or other hot climates, that I have myself frequently noticed, though I am not aware that it has been described by writers. Dark-complexioned persons suffer sooner, and much more, from the effects of the climate on their biliary organs, than those that are fair; by which it would seem that the eyes, hair, and skin, are an indication of the physiological condition of the hepatic system. I have examined many persons who had spent from twenty to thirty years in India, and in almost every case the dark-haired person has returned pale, emaciated, debilitated, and his digestive and biliary organs more or less disordered; whereas, the yellow, or red-headed, man has come back in good health, and, in many cases, had not had a day's illness since he left England. It would appear from this, that the liver is almost a different organ in these two subjects; and, indeed, the same fact seems to be established by the phenomena of typhus, and other types of fever, differing considerably in such persons; and further, by the circumstance that much larger doses of mercury are required to act on the organ in the fair, than in the dark-haired person.

---

* Op. cit.

Very recently, since the insurrection in India, an officer of very fair complexion, and having a profusion of light hair on his head and face, came home invalided, and was under my care from the time of his arrival in England. Mercury had no effect whatever on him, whether taken internally or applied outwardly. From his own account, this had been noticed before he left Lucknow, where he had taken fabulous quantities of the mineral, without the slightest effect being produced.

From this, it would seem that when a young man of fair complexion and light hair is predisposed to consumption, his going to India would be politic in every way. The climate would be likely to eradicate one evil tendency, without inducing any other.

The same rule applies to females. When a young girl, of consumptive predisposition, has an opportunity of removing to India, she should certainly embrace it.

Dr. Mühry, of Heidelberg, in the work already quoted at page 46, divides the atmosphere, vertically, into three stages:—the first, 3,000 feet high from the level of the sea; the second, from 3,000 to 12,000; the third, from 12,000 to 16,000 feet; taking the equator as the base of computation. His object is to show that each climate has its own class of diseases. The temperature in the elevated stage is from 32° to 41° Fahrenheit. In the middle, he recognizes a cooler and a warmer level; in the former, the temperature ranges from 41° to 54°, and in the latter, from 54° to 72°; while in the lower, or hot region, the mean heat is from 72° to 81°. After enumerating the diseases peculiar to, or most prevalent in, the different climates, he goes on to say,—

> "The most important, and, possibly, the most practically useful, influence of the climate of the higher regions, and which is to be ascribed specially to the rarefied condition of the air, is the decrease, and complete absence of *tubercles* of the lung, pulmonary phthisis; the diminution of this disease being plainly perceptible at an elevation of 4,500 feet."

Admitting that consumption occurs, more or less, in all climates, Dr. Mühry shows that there are certain regions, in all zones, where the disease is of rare occurrence, or is almost entirely absent. It is very rare in Iceland, and also in the Feroe Islands; while, on the borders of Canada, at Fort Kent, Maine, where the mean temperature is 35° 8′, and where quicksilver freezes in winter, it scarcely ever occurs.

In the temperate zone, there are three districts "remarkable for special immunity from consumption; namely, Algiers, Egypt, and Syria, and the Steppes of the Kirghiz, near Orenburgh. We may add, that in Marstrand, an island within six or seven miles of the coast of Sweden, consisting of a single rock of granite, mixed with gneiss, pulmonary consumption is scarcely known among the natives. The disease, moreover, appears to be remarkably arrested in such phthisical patients as sojourn there during the summer months; namely, from the beginning of July to the end of September."

Consumption diminishes decidedly in elevated situations, in consequence of the great rarefaction of the air, which appears to lead to great expansion of the chest, and to a high development of the lungs. Dr. Mühry suggests on this, that in cases presenting a tendency to consumption, the frequent and constant practice of deep inspirations would be a rational proceeding of easy adoption. The Doctor recommends an elevation of 7,000 or 8,000 feet, though a lower range would probably be found useful to those accustomed to lowland habitations.

He observes, consumption is rather more frequent in islands, and in coast districts; a fact probably connected with the great barometric pressure at the level of the sea; in opposition to the much lighter pressure in elevated regions on the mountains.

Seaports have many disadvantages: the temperature is more variable, the air is damper, the barometric pressure greater, and the soil is most frequently alluvial; whereas we should seek a foundation of rock, chalk, or coal.

In an account of Syria, lately published by Mr. Farley, British consul there, Beyrout is described, however, as possessing extraordinary restorative powers, easy of access, and cheap to live in.

Consumption is not a prevalent disease in Russia. Sir J. Lefevre, formerly physician to our embassy at St. Petersburg, ascribes its rarity, comparatively, to the great care paid to personal clothing, and to the habitual and constant warmth of the houses; all the rooms being heated alike, and the temperature regulated by thermometer stoves in the entrance-hall. As, moreover, the windows are all double, are never opened, every joint and crevice being hermetically sealed with putty, the atmosphere of Russian houses is anything but agreeable to the olfactories; indeed, in the habitations of the lower classes, the stench is intolerable, on first entering; yet the equable temperature protects the respiratory organs.

The rarity of consumption in that rigid climate is partly attributable to the oleaginous quality of the food of the people. Fish oil has always been one of their chief articles of diet. Is it because they have strong stomachs, that they have also strong lungs? It is more than probable that it is so. Weakness in the digestive and assimilating organs, is one of the forerunners of consumption.

As already mentioned, places situated at great elevations are nearly exempt from pulmonary disorders. The air is pure, dry, free from effluvia, lighter, colder, particularly calculated to harden and strengthen the frame generally, and the respiratory organs in particular; it is especially adapted, therefore, to the prevention of consumption. But careful discrimination is necessary; for, a person positively labouring under the disease, in what is termed a confirmed form, would undoubtedly be made rapidly worse by repairing to any such locality.

There are countries where consumption is unknown: Iceland, for example (on the authority of Dr. Schleisner); and consumptive patients are never seen in Finmark. The Swedish physicians say the disease is less frequent as we proceed northward, and they ascribe this advantage to the preventive action of the polar regions!

Canada is a doubtful country—the vicissitudes of climate there being so great; yet there are persons who recommend it.*

The United States of America suffer more from consumption than almost any European country. There, in addition to the great extremes of climate, in summer and winter, the habits of the people lead to the disease, especially amongst females, who are charged with appearing abroad in an insufficiency

* "Hesperos;" by Mrs. Houston. 1850.

of dress; whereas the male population injure their health, and shorten their days very materially, by their great abuse of ardent spirits and tobacco.

We have some data by which we can compare the mortality from consumption, and other diseases, among Englishmen at home and abroad. The statistics are military, and refer only to males; they are, nevertheless, valuable, and their authenticity is unimpeachable.

TABLE VIII.

The following Table, compiled on and by respectable authority, shows the Comparative Annual Ratio of Mortality per 1,000 *mean strength of British Troops, in the United Kingdom and its Colonies.**

Mortality.	United Kingdom.	Malta.	Gibraltar.	Ionian Islands.	Nova Scotia and New Brunswick.	Canada.	Jamaica.	Average of W. Indies.	Sierra Leone.	Cape Coast.	Cape of Good Hope.	Cape of Good Hope, Eastern Frontier.
By fevers........	1·4	2·9	9·3	13·0	1·6	2·4	101·9	36·9	410·2	382·6	1·9	1·2
Eruptive fevers..	0·1	0·1	..	..	..	0·2	..	..	..	..	0·1	..
Diseases of lungs	7·7	6·0	5·3	4·8	7·1	6·7	7·5	10·4	4·9	1·6	3·9	2·4
Diseases of liver	0·4	1·1	0·4	0·8	0·2	0·2	1·0	1·8	6·0	14·3	1·1	1·0
Diseases of stomach & bowels	0·8	3·6	2·1	3·5	1·5	1·3	5·1	20·7	41·3	220·6	3·1	2·3
Epidemic cholera	1·2	..	..	..	1·4	2·1	..	..	..	..	..	..
Diseases of brain	0·7	0·8	0·9	1·0	1·3	1·2	2·6	3·7	4·3	1·6	1·3	0·6
Dropsies........	0·3	0·4	0·5	0·6	0·5	0·4	1·2	2·1	4·3	3·2	0·6	0·5
All other diseases	2·7	1·4	1·3	1·5	1·1	1·6	2·0	2·9	12·0	44·4	1·7	1·8
Total......	15·3	16·3	20·1	25·2	14·7	16·1	121·3	78·5	483·0	668·3	13·7	9·8

The mortality among the officers was only about half of that among the men; the difference supposed to arise from the former being better housed and fed.

Where certain epidemics prevail, devastating whole districts and countries—such as plague, cholera, and fever, consumption is almost unknown. The most unhealthy part of the globe, as far as we know, Cape Coast, appears nearly exempt from it, as if there were an antagonism between it and the pestilential malaria arising from the decomposition of animal and vegetable matter in tropical climates.

---

* *Quarterly Review*, July, 1840.

The English army certainly loses more men, in proportion to its mean strength, in England, than in the colonies. The sea appears to operate as a preventive of the disease to a certain extent: more soldiers die of it than sailors. At Malta the mortality from it annually among the troops is below 5 per 1,000 mean strength; at Gibraltar, Mauritius, and Ceylon 4 per 1,000; at the Cape 3; at Madras 1 per 1,000.*

We have been recently informed by Dr. Thomson† that the health of our troops stationed in New Zealand is remarkably good; that not only is the general mortality low, but that consumption is extremely rare. According to his account, the matter stands thus: the annual loss in 1,000 soldiers is in—

	General Mortality.	From Consumption.
New Zealand	8¼	2·7
Great Britain	14	10·2
Australia	11	5·8
Cape of Good Hope	15	3·0
Malta	18	6·0
Canada	20	6·7

---

* *Lancet*, July 25th, 1857.

† "Story of New Zealand;" by Arthur S. Thomson, M.D., Surgeon-Major, 58th regiment. 1859.

This report does not exactly correspond with the table No. VIII. at page 122. It is calculated, moreover, to convey an erroneous impression as regards consumption. The account rendered by the commissioners in 1858, of the sanitary state of the army, as quoted at page 88, did not ascribe the high mortality to consumption exclusively, but to pulmonary diseases generally. Now consumption carries off only about half of those who die of what are commonly termed diseases of the chest.

New Zealand may be highly favoured in its immunity from consumption, but this probably arises from the great elevation of many parts of the country. Several of the mountain ranges are 6,000 and 8,000 feet high. The warmest portion of England corresponds exactly with the coldest part of New Zealand. The latter country advances towards the sun 1,200 miles, whereas the British Isles extend 600 towards the colder regions.

If there be one moral agent greater than another in producing a depressing effect on patients, it is bringing the unfortunates—fellow-sufferers alike—face to face, and showing them, as in a mirror, their impending fate. It rarely happens that a person, in confirmed and incurable consumption, feels, or, at any rate acknowledges, that his doom is fixed: he clings to hope, and is cheerful; he refrains from looking at himself in a glass: if he does, he is painfully impressed with the consciousness of his downward course.

It is certainly impolitic, if not cruel, on the part of attendants, to perpetually sound the note of alarm in his ears; and this leads us to make one remark on the subject of hospitals for consumption.

In the advanced stages of consumption, patients are usually confined to their bed. To place several sufferers side by side in the same apartment, seems the acme of imprudence. The unvarying and oft-repeated process of removing the victims from whom the spirit has departed, must have an indescribably deadening effect on the poor survivors—all looking for their own turn to be carried forth.

The atmosphere of an hospital is always pernicious,—so much so, that the strongest person's health is damaged by a constant exposure thereto. In the case of an epidemic prevailing, the resident officers and nurses have less chance of recovery, than persons brought in from without. On this principle, it is common, on a resident officer being attacked by epidemic fever, for example, to have him at once removed to a lodging, away from the institution. Yet the great error is persisted in, of bringing together persons suffering from disease of the respiratory organs,—and that disease, which of all others, requires the air to be pure and uncontaminated.*

---

* No hospital, except for casualties, should be erected in a city or town, but at some distance from it. How the practice became so general, of placing these sick-asylums in the heart of a great

Dispensaries are occasionally opened for the relief of consumptive persons; the same objections do not exist as against them, or, at least, to the same

city, like London, for example, is most inexplicable; the same mistake is not made in provincial towns—there the hospitals are invariably in the environs.

We believe the day will come—nay, is at hand, when the very idea of confining within a large city or town, a multitude of human beings suffering from any disease, will be looked on as one of the lunacies of science. It is, certainly, necessary, where there is a large and dense population, to have a central receptacle for cases of accident; but hospitals are erected for the welfare of the sick, and no one can deny that nine out of ten of the inmates of our London hospitals would be infinitely better off in some airy suburban situation.

COMPARATIVE AMOUNT OF MORTALITY.

Rural Hospitals.	Deaths per cent. of Patients.	*City Hospitals.*	Deaths per cent. of Patients.
Salop	3·7	Manchester ...	7·2
Winchester ...	3·8	Liverpool ...	5·6
Salisbury ...	3·1	Bristol	9·5
Chester	4·2	London	9·0

Medical Times, January 26th, 1858.

The prejudice, or blind attachment to custom, because it is old, which has hitherto interfered to prevent improvement being introduced into very many of the metropolitan institutions where it is earnestly demanded, is likely to be removed by accident, in the case of one of the great London hospitals. St. Thomas's Hospital stands in the way of a projected railway extension, and as everybody and everything must bow to these giants of yesterday, there is a great probability that the hospital will be driven out of town. When the removal has really taken place, the authorities connected with it, instead of lamenting over their *ostracism*, will, beyond all doubt, find grounds for thankfulness that their sphere of utility has been thereby greatly extended and increased.

degree; but even these must be, in many instances, all but useless, unless the patient is visited at his own abode.

Were any proof wanting of the inutility of hospitals for the cure of consumption, it is abundantly supplied by the reports emanating from these institutions themselves. From them it appears that the amount of relief afforded, and the success attending the treatment, are comparatively small.

While these pages were passing through the press, the following case occurred, showing how unsafe it is, even for a person in good health, to be confined in the same room with an invalid suffering under disease of the lungs. The mistress of a training-school in London, aged twenty-five, went, during her vacation, to visit a friend at Hull, labouring under consumption. During five weeks, she was in constant attendance on her friend, scarcely ever quitting the sick-room; she took her meals with her, but did not sleep in the same apartment. Her health became much impaired; and on her return to London, when she called on me, she was pale, thin, weak, unable to eat or sleep; she had a relaxed throat, slight cough, and headache; she was altogether out of condition.

There were no direct pulmonary symptoms present, nor was the pulse much affected. Her own opinion was, in which I coincided, that had she remained much longer with her friend, she would herself have become the subject of consumption. She soon recovered, and resumed the duties of her school. This case might, perhaps, with more propriety have been placed under the head of "Causes." Causes, however, require to be mentioned, in order that they may be avoided.

The occupation of a person predisposed to consumption should be such as to give full development to the respiratory organs, and the various motive powers of the system. It should be such as to admit of the person's spending a considerable portion of the day in the open air; he should devote a certain portion of his time to, and shape his occupation so as to maintain, a standing posture; for instance, if he be engaged in reading or writing for some hours daily, it would be far better that he stood at a desk occasionally, rather than sit always at a table; the respiratory function, as well as the digestive, is thus assisted in its action, and is better performed; the regularity of the bowels is kept up, and the muscular strength of the body improved by this position.

It is not intended that a person should observe a standing posture against his inclination or strength; but when it is immaterial to him which position is kept, standing for certain periods will be found conducive to health; and if he be unaccustomed to be on his legs long together, he might practise it for half an hour, or an hour, at a time, returning to it as often as he finds it suit his purpose.

Occasional standing should not be confounded with the perpetual habit, of necessity borne by persons in certain occupations. Many of these, who are compelled to stand the whole day behind a counter, for instance, suffer much inconvenience from varicose veins, or œdema, which is not the case in a person accustomed to much walking. Standing, moreover, for a specific period, in a good position, conduces to a handsome form and elegant carriage, as is seen in those who have passed through the hands of the drill serjeant or deportment master.

Next to standing, the mode of *sitting* should be considered. A person should not have recourse to luxurious seats, such as sofas and easy-chairs, unless for the express purpose of taking rest when fatigued. He should use a plain chair, having a back, but without arms, though, if he be employed in reading, the latter are useful; he should not keep his legs up, on a level with his seat, as this posture, pleasant though it be to the lower limbs, draws seriously on the strength of the back: it is next to impossible for the spine to be kept in a healthy or normal position, if the person sit constantly with his legs "up," as it is termed; indeed, the lumbar vertebræ, instead of having their natural convex form forwards, acquire a convex backwards, which is highly injurious, both to the strength of the spinal column, and to the action of the mesenteric glands and vessels; it is opposed, besides, to all elegance of form. These remarks, of course, apply only to such persons as can adapt themselves to any mode of sitting, without inconvenience to themselves; for often, unfortunately, it happens, that patients are under the necessity of reclining on couches, and having what should be the hollow of the back supported by pillows; nor are they intended to interfere with a person throwing himself into an easy-chair, or on to a sofa, when overcome by lassitude.

It is much to be regretted that chairmakers in general do not study anatomy; for, then should we have rational supports for our weary bodies, instead of the barbarous perpendiculars constructed to support the human frame. At some ladies' schools, a species of perch, with a high upright back, like a garotte chair, is used: a curious machine, certainly, to improve the figure of a growing girl.

Next to standing and sitting, the recumbent posture should be looked to. Many a person accustoms himself to lie on down, so soft, that the body is literally embedded in it, as a cast lies in a mould.

This is a most unphysiological practice, and, indeed, little adapted to give refreshing sleep. It is detrimental to the healthiest person, and positively injurious to one that is weakly. It was never intended by nature that we should be closely packed amongst feathers, for the purpose of obtaining rest and repose. There are certain functions of the body, more especially the circulating, respiratory, and digestive systems, which require room and space for their uninterrupted play and action, whether we are standing or lying, waking or asleep. Plunged in a downy bed, sunk in a slough of complexity, as it were, none of these can act freely. The function being impeded, the body cannot obtain refreshing sleep; on the contrary, it is harassed, restless, and tormented by nightmare, which is as hurtful as if it were purposely deprived of the opportunity of repose.

To obtain healthy and invigorating sleep, a person should lie on a tolerably firm unyielding mattress, not necessarily hard or lumpy, the head supported by a pillow of moderate dimensions; the body, resting on those salient points which naturally present themselves, the chest and abdomen have scarcely any bearing. The natives of hot climates, from necessity, use this kind of bed, the lower classes sleeping on mats laid on the floor; and, in summer, even in this country, most persons are glad to exchange the soft bed for a mattress.

Persons predisposed to consumption should never lie on anything, as a bed, but a well-made hair mattress—the cold of winter being counterbalanced by additional covering, or, what is much better, by having the sleeping-apartment made equally warm with that used during the day.

The body cannot be kept in health and strength without due and regular exercise; of that, the most natural, therefore the most efficacious kind, is walking, when it can be adopted.

Those persons enjoy the best health, if not the longest life, who live on this principle. It is obvious we were not furnished with ample powers of locomotion without *design;* the proper exercise of all our mental and physical endowments evidently contributing to a sound and healthy condition of mind and body.

Walking tends to health, directly and indirectly: it strengthens the muscular tissues, and not only assists the circulation, but causes a larger and better supply of oxygen to be furnished to the blood. A young person, predisposed to consumption, should take walking exercise regularly, as far as his strength will permit; he should not measure the time by his watch, or the distance by the milestone, but be guided as to both by the state of his physical powers alone, always remembering to keep within the bounds of fatigue,—"citra fatigationem sit," as Celsus says.

When he is able to go a certain distance on level ground, with comparative ease, he may try his powers in surmounting hills, taking, of course, those only which are short, and of gentle ascent. Should the effort produce palpitation or cough, he should at once abandon the attempt, and confine himself to level ground.

Great walkers—men who can go on foot a considerable distance daily, who can accomplish their fifteen or twenty miles, without stopping, and without inconvenience, are, generally, persons of capacious chests, and iron lungs, rendered so, in great measure, by the hard training they undergo. It is almost needless to say, that such persons seldom die of consumption, or, in fact, of any other disorder of the respiratory organs.

Gardening is one of the occupations well adapted to improve the tone, and increase the strength;—not the laborious part of it, but the laying out of ground, and training of plants and shrubs.

There is an agreeable combination of employment for both mind and body in this occupation, which makes it extremely conducive to health; it is, moreover, peculiarly pleasant to watch the development of leaf and flower, and to look forward to an autumnal gathering of mellow fruit.

In immediate connection with the subject of gardening, is the matter of *conservatories.* Glass houses, of sufficient dimensions, and kept to a uniform temperature, form admirable places of resort and for exercise for persons in delicate health. Every person, on entering one of these on a chilly day, acknowledges the agreeable sensation experienced in passing from the outer air into the balmy atmosphere; it is, therefore, not difficult to understand how grateful the change must be to one whose respiratory organs are weakly. The air is not only warm, but *dry*, and so much the more suited to his requirements. He paces up and down, sits and reads, or amuses himself, attending to the plants, by the hour together, when, perhaps, the unpropitious weather, or the season of the year, prevents his going out of doors.

It is said that the late Lord Braybrooke, in his declining health, spent much of his time in his conservatory, and that he found it one of the most agreeable and beneficial places of exercise.*

Animals and vegetables have many points of resemblance in their organization and functions. The glass-house is found to be the only means of rearing certain tender plants in these latitudes. There is nothing unreasonable in the idea that it may do as much for the tender plants of our own species.

In the menagerie formerly in the Surrey Gardens, directed by Mr. Cross, very few of the animals died. This was owing to their being protected from the outer air, by their dens and cages being entirely enclosed within a large and handsome conservatory of glass, which was generally kept shut.

If an invalid, or a young man predisposed to consumption, have not strength or inclination for walking exercise, he should ride, or use a boat—adopting that which he finds most agreeable to his feelings and powers. When he is equal to it, he might, with advantage, enter into such sports as cricket or archery, and, by degrees, take to shooting, hunting, and rowing; always keeping within the limits of fatigue, as was just now mentioned; for over-fatigue, once brought on, might deprive him of all the advantage that had been gained by months of judicious management. A state of great fatigue, bordering on exhaustion, is a most perilous condition for a delicate person to be in—as dangerous to him as being drenched to the skin, and then remaining inactive in wet clothes.

---

* "The Orchard House;" by Thomas Rivers. London, 1858.

In a family predisposed to consumption, reading aloud, and singing, should be encouraged, the extent of which should be regulated by the effect it produced on the individual: if it agree, persist; if not, give it up, should be the rule. The chances are, it will not only suit most members of the family, but will tend to strengthen and fortify the respiratory organs, rendering them proof against the attacks of disease.

Instrumental music, whether requiring air from the lungs, or mere manual exertion, should be practised with caution. They both require great efforts occasionally, and the excitement produced on the system is known only to those who experience it. If it be practised with facility, and without fatigue, it will do good, but not otherwise. The training the lungs to full and free action, by habitual deep inspirations, is a practice strongly recommended by Dr. Mühry, whose opinions on climate have been already quoted. The blowing of the flute, horn, or cornet, unquestionably tends to increase the capacity of the chest, and at the same time leads to greater development of the lungs.

Mechanical occupation, such as playing at billiards, turnery, carpentry, are useful agents in promoting the physical powers; they have the advantage, too, of being within reach, when the state of the weather prohibits a person leaving the house.

There is one habit the delicate person should avoid, namely, *smoking* to excess. Tobacco is a most powerful narcotic, and is highly injurious to a weakly constitution. It often interferes with the natural appetite for food, and paralyses the powers of digestion.

The habit of smoking grows on one. In some persons it would seem as if the greater the indulgence the greater the desire. It induces habits of intemperance, the baneful effects of which need not be descanted on here, farther than saying, that the abuse of spirituous liquors is well known to be often the exciting cause of consumption. Unquestionably, excessive smoking stops the growth, in young persons; and those addicted to it are remarked, moreover, not to be prolific: another proof of the stupefying influence of the drug—"Three cheers for the leaf!" Mr. Malthus would say.

Consumption is essentially a disease of debility, depending, originally, on derangement of the nutritive function. The assimilating apparatus, whose duty it is to convert the various articles coming under the denomination of food into the tissues of the living organism, is impaired in its action; it fails in its duty. Nutriment of every kind is offered—nay, more, is taken; for the inclination for food is often very great, and yet it tells for nothing—the power of conversion is deadened,—"the spirit is, indeed, willing, but the flesh is weak."

The expedient is tried, of selecting such articles as are most likely to suit the defective action, while a radical cure is attempted, of restoring the whole machine to a sound and normal state.

The diet, in consumption, should be nutritive, without being stimulant: the presence of appetite is a proof that a liberal quantity of nutriment is required. The cause of this is obvious: the *tabes*, or wasting of the body, consequent upon deep-seated derangement of the chylopoietic function must, if possible, be stopped.

Nature does all she can to counteract it, by calling for an abundant supply of nourishment; and were there no obstruction to the aliment passing fairly into the system, the disease of the respiratory organs would be got under much more frequently than it is; but the nutriment does *not* pass into the blood; the chyle is obstructed by induration of the mesenteric glands, and the animal heat is kept down, the due supply of oxygen being intercepted by the tuberculous state of the lungs. According to Liebig, whose investigations have thrown much light upon this part of the subject, the food is so much *fuel* furnished to the human stove, a certain quantity of pure air (containing its proper proportion of oxygen) being necessary for the free and regular *combustion* of the same.

Persons predisposed to consumption prove, frequently, by their pallid features, cold extremities, and general chilliness, how badly the temperature of the body is kept up, not from any want of fuel (food), but from its not getting fairly into the system, or being brought into contact with the atmospheric air, indispensable to its combustion. The food may be digested, but the chyle may never reach the thoracic duct, or, having got thus far, may then be wasted, as far as the due nutriment of the body is concerned, by not coming into contact with oxygenated air in the lungs; for arterial blood alone is the renovator and warmer of the animal economy, and, in a consumptive person, the blood is not only scanty in quantity, but defective in quality, being venous, in fact;—hence the wasting, the debility, the pallor, lividity, and coldness.

It is all-important, therefore, on every account, that abundance of nutriment should be supplied; and this principle must be kept in view from the very birth, in the case of a child descended from parents of a strumous habit.

Every child should be reared according to nature's rules—it is its birthright. If delicacy of constitution, on the part of either parent, be its harbinger into life, it is the more essential that those rules be strictly observed.

It should have an abundant supply of healthy human milk for its sole sustenance, either from its mother or the mother's substitute. If the parent be incapable of supplying a sufficient quantity of nutriment, either from delicacy of constitution, or from becoming what is called a "bad mother,"—that is, growing stout or robust soon after her confinement, and losing her supply of milk, living, as it were, only for herself and not for her offspring,—

a healthy wet-nurse should be obtained. The first care in this case is to see that the said nurse is not over-fed, but kept nearly to the same diet as that to which she was previously accustomed. Many a young woman, to all appearance a pattern of a nurse, is introduced into a family, but fails in her duty, from this precaution not being observed, and is obliged to give place to another, much to the disappointment of all parties concerned, and especially trying to the poor infant. The nurse has, in all probability, been accustomed to the plainest fare; and, from mistaken motives, to commence pampering her, as soon as she has entered on her new duties, is the surest way of destroying her milk. The mother that is emaciated, and perhaps half starved, often exhibits the strongest and stoutest infant.

Milk is the natural sustenance of the young of the mammalia class. It is not unfrequently the staple food of persons of weak digestion, more advanced in life, and even of aged persons.

Cow's milk consists of—

Water	86·0	or	Water	86·0
Casein	5·0		Flesh-formers ..	5·0
Butter	3·5		Heat-givers	8·0
Sugar	4·5		Mineral matter ...	1·0
Salts	1·0			
	100·0			100·0

Should it be found impracticable to provide a wet-nurse, that substitute should be obtained which approximates most closely to human milk. Whey, slightly sweetened, is often found useful; but cow's milk, diluted, and skimmed of its cream, may be made available. The milk best adapted for infants, from whatever source it comes, should, when examined in a wine-glass, have that thin, watery appearance, to which has been applied the somewhat reproachful soubriquet of "sky-blue."

There is, however, no substitute to the little creature nestling in its mother's bosom, however successful we may be in the quality of the supply.

There is a difference in milk, according to the source whence it comes:—

		oz.	grms.
1lb. of cow's milk contains—	Water...	13	333
	Casein...	0	350
	Butter...	0	245
	Sugar ..	0	315
	Mineral matter ...	0	70
1 lb. of human milk contains—	Water...	14	41
	Casein...	0	210
	Butter...	0	210
	Sugar ...	0	280
	Mineral matter ...	0	35
1lb. of asses' milk contains—	Water	14	76
	Casein...	0	140
	Butter ...	0	105
	Sugar ...	0	420
	Mineral matter ...	0	35 *

There is no objection to giving a child at the breast a little spoon-food once a day; on the contrary, there are many good reasons why this practice should be adopted: the mother may not have quite as much milk as the infant may require; or,

---

* Dr Lankester's Analysis.

she may be so circumstanced that she cannot furnish a supply at the moment it is required: she may be out of the house; she may be indisposed; she may be asleep, and it may be necessary to her that her rest be not disturbed; many other causes may arise, but the giving an infant artificial food should always be the *exception*, not the rule. The convenience of the practice of training an infant to take nourishment occasionally from the spoon, is found to be very great, and should be commenced at birth. It is a wholesome system of discipline, and when the period of weaning arrives, the advantage of its being adopted will be still more apparent.

When the constitution of the child requires change of diet, teeth present themselves. Then it is the duty of the parent gradually to withhold *her* supply, and, in place of it, cautiously to administer farinacious and animal food, with as much cow's milk as may be required.

No child should be *dry*-nursed, or brought up by hand, as it is called. The experience of all persons, in all ages, is against the practice; and where a consumptive tendency exists in the family, it is doubly objectionable.

The late Dr. Merriman contended that four children out of five, brought up by hand, were lost in rearing.

Many persons consider that infants should be fed on farinacious food, bread and milk, and puddings for several years. This a great mistake. Most children will take this kind of diet readily enough, perhaps even prefer it to any other; but they grow up fat and flabby, robust in appearance to ordinary observers, but destitute of bone and sinew; they have little or no stamina, and are the most ready victims to passing diseases, especially the epidemics of childhood and youth.

As soon as a child has teeth, it should have a bone to suck, taken from a neck of mutton, well boiled: in all probability it will take to it greedily; this it should have every day.

The effect of this change of diet should be watched, especially on the evacuations, and the number of them. If it appear to agree, as it most likely will do, well; if the child should be heated by it, its face flushed, or its bowels constipated, the plan should be suspended. In nine cases out of ten, however, none of these inconveniences occur.

It often happens that children, delicate from birth, and never healthy at the breast, become strong and robust, as soon as this change of diet has been adopted.

After a month or six weeks, small quantities of meat, minced, and mixed with bread-crumbs, or a mealy potato, should be given once a day,—about three times a week at first, and after two or three weeks, every day.

This course should be regulated partly by the season of the year. Infants, like their elders, bear stimulating food better in winter than in summer.

I knew a family of six children, with little more than a year between the ages of either two of them, who were delicate from their birth, and their mother was incapable of suckling them more than three or four weeks. Born under adverse circumstances, they were, moreover, dry-nursed, on account of the unwillingness of the mother to have a stranger for them—a very common difficulty in such cases. They all showed great weakness of constitution, as may be supposed; but by pursuing the plan here recommended, of administering animal food early and perseveringly, they all outgrew their natural weakness, and became healthy and strong.

Nature provides children with a quicker and more powerful digestion, in comparison with their years, than adults, for obvious purposes: their perpetual motion and increasing bulk and stature require constant supplies.

Man is provided with teeth similar both to those of animals which are exclusively carnivorous, and exclusively gramenivorous; it is, therefore, plain that he should have both kinds of food.

Persons who live entirely on vegetables—and we have many such persons amongst us,—have less intellectual power and physical strength than others; they have so little spring, elasticity, or energy, that in illness they sink to a miserable state of depression, from which it is often difficult to raise them. If they get an inflammatory attack, the chances are greatly against their recovery—they can neither bear the disease nor the remedies: a leech or a dose of active medicine, would endanger their life—to use a seafaring phrase, they are all their lives "hugging a lee shore;" the slightest mischance may prove fatal. The efficacy of animal food, in warding off consumption, or any other disease of debility, is strongly exemplified in butchers. Carbonaceious, nitrogenous aliment, is indispensable to persons who have laborious bodily duties to perform, as well as to those residing in cold, or cold and damp climates.

Soldiers, sailors, and others, subject to privations and hardships, sink under their fatigues, unless they have an ample supply of animal food. The Laplanders and Esquimaux could not exist without huge allowances of tallow and blubber.

In Iceland, scrofula is almost unknown, consequently consumption is rare. This is only to be accounted for by the circumstance of the inhabitants consuming fabulous quantities of oleaginous food.

An opinion long prevailed, that animal gelatine (jelly) might serve instead of muscular fibre, as an article of food. Such, however, is not the case; but it offers a most convenient cement, or stock, for holding animal food in preserve. Some years since, the French Government caused a series of experiments to be tried, to ascertain if it would supply nourishment to troops on a campaign. It was found that the men could not live on it—at least, so as to be in a condition proper for active service; they derived more support from bread alone; but neither was a substitute for flesh.

This agrees with our experience in the administration of it to invalids. It is preferable to muscular fibre, in certain cases—for instance, in the first stages towards recovery, after severe illness: afterwards, however, it is useless *per se*, but is always a valuable addition to the fleshy fibre in soup or gravy; it contains less nitrogen and carbon, in fact.

To train up a child according to the dictates of nature, and thus secure him, as far as lies in our power, from consumption, or other scrofulous ailment, it is indispensable that he receives a proper quantity of animal food, with a wholesome admixture of vegetables.

If he show a predilection for pastry and puddings, it should be corrected as soon as may be. Children often take these, to the total exclusion of animal food; but the habit must be eradicated: it is not difficult to accomplish, commencing with the stratagem of giving *equal quantities* of each, proclaiming the rule, that he who takes most meat shall have most pudding.

If they show an ordinary power of digestion, it is better so to change the meat daily, that they do not tire of any one sort; always avoiding what may appear to disagree with them. Mutton and beef should be the staple dishes. Pork, veal, salt or cold meat, and fish, should not come up often. If tarts and puddings are given, they should be light, and well cooked. Apples make the best tart, and milk, with an egg or two, should be the chief ingredients in the latter. Water, or milk and water, should be the sole drink. As for malt liquor or wine, they should never see, or even smell it.

If there be one practice more injurious than another in connection with the rearing of children, it is that of allowing them to eat at irregular hours. Nothing is more hurtful to a healthy organization, than the habit of cribbing between meals. However innocent in themselves the articles eaten may be, taken at proper times, no stomach, and no system, will long endure the *stuffing* that some children are allowed to indulge in. Bread and butter do harm taken in this way; but when cakes, pastry, sweetmeats, unripe fruit, and other abominations are permitted, there need be no surprise if the child have a scabbed head, a blotchy face or skin, large belly, intestinal worms, and his general health altogether deranged.

With certain exceptions, nothing should be eaten between meals; but the meals should be given with punctuality. Children, from the age of two to ten, should breakfast at eight or nine, dine at twelve or one, have tea at four or five, and supper (a kind of second tea) an hour before going to bed.

It is hardly necessary to say, that much depends on their rising and going to bed with regularity. Young children, such as we have mentioned, require at least ten or twelve hour's rest, some considerably more. They should be trained to *early* hours; they should rise at seven, and be ready for breakfast at eight. The morning air is fresh and bracing; and its strengthening properties are particularly adapted to a healthy development of the organs of respiration.

Should there be a decided tendency to cough or other weakness of the chest, great caution is necessary to avoid the exciting cause, whatever it may be.

Children's clothing should be regulated more in accordance with comfort than fashion. It is common to see them warmly clad as to their bodies, but with scarce any covering on their arms and legs. There is no reason for this disparity. Exposed to the outward air and vicissitudes of weather, the circulation in the limbs cannot be carried on as well as if these parts were equally covered. If the circulation be badly performed in the extremities, as indicated, for example, by the presence of chilblains, there is great risk of the same defective action occurring in more important parts of the system. Healthy, robust children, always in motion, may bear this unequal dress, and even become stronger under its use; but that is not the case with those who are delicate; in them the attempted process of hardening may indeed do much harm. A remarkable instance of capricious clothing of children is seen at the Blue Coat School, in London. The boys there are more warmly clad about their bodies than other children; whereas the head has no covering at all; even the hair is kept shortly cropped. This inconsistent mode of dress certainly interferes with the normal development of the intellectual organs. Many persons are of opinion that but for this a much larger amount of "talent" would be displayed in those who have been educated at this Alma Mater. (Quære, Dura Mater ?)

Children's clothing should be adapted to their strength. If they are strong and active, scanty covering will probably case-harden them against vicissitudes of climate, and render them still more robust; but if, on the other hand, they are weakly, or predisposed to any ailment of the respiratory organs, they should be carefully and comfortably clothed from head to foot; bearing in mind the principle, that the *minimum* is better than the *maximum* of covering.

Habit goes a great way in this, as in other matters. The natives of this island once went naked, when the soil was undrained and uncultivated, and the climate consequently far colder than it is at the present day. The aboriginal inhabitants of New Zealand, in a climate closely corresponding with that of England, do so now. With scarce any covering, except the scarf around the waist, they bear the cold of winter, and even stand on frozen lakes, without inconvenience. Not long ago one of our ships of war touched at these islands, in the month of July,—the depth of winter. A severe frost prevailed, and some of the officers going on shore with skates, amused themselves on the ice, to the great astonishment of the natives, who squatted in groups on the frozen surface around the skaters, gazing at the scene, and apparently suffering no inconvenience from the cold. It is therefore plain that much of our clothing is the result of luxurious indulgence, and not absolutely necessary to our natural organization. This country, New Zealand, is described by Dr. Thomson as being particularly free from consumption (see page 123).

It is important to regulate the amount of bed-covering. A sufficient quantity should be used, without the *weight* being increased. Thick, ponderous coverlets, of cotton, completely covering the bed, and reaching to the ground, are most objectionable. Instead of giving warmth, they oppress the sleeper. Woollen blankets are the staple covering for warmth; and over them a thin light linen or cotton coverlet should be laid, which admits of being easily tucked in at the sides.

For those who are predisposed to consumption, as has already been mentioned, the temperature of the sleeping-room should be duly regulated, so as to render the quantity of bed-covering a matter of less consequence.

The more important epoch in life, especially where consumption is to be apprehended, is the approach to man- and womanhood.

A period of three or four years transforms boys and girls into men and women; the physical development proceeds rapidly; the mind expands; the tastes and feelings undergo a vast change; the passions burst forth. No wonder, then, that this great transition should not unfrequently be accompanied by derangement in some part of the complicated human machine.

The great point is, to watch youth through this strait; to prevent, as far as possible, all exciting cause, and to guard against the very approach of mischief; and this is to be done by strictly adhering to the code, touching the mental and bodily exercise, diet, clothing, and occupation.

It is necessary here again to refer to diet. During the passage from youth to manhood, an ample supply of animal food is indispensable. Many young persons, especially females, care little for animal food. This is unfortunate, for it often leads the way to bodily ailments, consumption among the number.

Every young person should be encouraged to take his meals with regularity, and to eat a fair quantity of nutritious food. Dinner, of course, is the chief meal; but, if possible, he should make a hearty breakfast. It is rare, indeed, to meet with any one suffering inconvenience from excess at this period of the day. It matters little, moreover, if he have a tolerable digestion, of what the meal consists. As to beverage, coffee and chocolate, with abundance of milk, are the best; there is little objection to tea, taken in the same way, but it should not be drunk either very hot or very strong. Tea, according to Dr. L. Playfair's tables at the Kensington Museum, is highly nutritious. It is the chief support of the people in China; for, excepting a little rice, they scarcely get anything else, according to Abbé Huc. Strong tea is a powerful medicine, analogous to digitalis, in its effects, and should not be indulged in habitually. It is, however, a delicious and refreshing beverage, when a person is tired or exhausted, and, as such, is a valuable restorative.

A young person, living by rule, should take plain food, not highly seasoned. The meat should be well dressed, eaten hot, except in the height of summer, and on no account taken when tainted. The custom of eating venison and other game, in what is termed a *high* condition, is highly objectionable for invalids. The fermenting German sausages, so detrimental to those who take them, are a proof of this. Though *plain-dressed* meat is recommended, there is no objection to stews, if they be carefully cooked. Some persons have a predilection for cold meat; this taste should be corrected for many reasons. There is a great increase of the circulating fluid in the vessels about the stomach, immediately after food has been taken into it, and consequently of animal heat, which is essential to a healthy digestion. If the meal be introduced *cold*, the organ is baulked in the very first stage of its duty; for time must elapse for the food to have acquired the temperature of the body, before the process of digestion can begin. This delay in a weakly person is the immediate cause of pain, flatulence, heartburn, nausea, headache, and other inconveniences. Persons in good health may take cold meat if they prefer it; but invalids should study the stomach before the palate. This rule, of course, cannot be observed in all cases; for, in the abode of indigence, where both food and fuel are scarce, the sufferer cannot have a choice. In very hot weather, when cold meat is preferred, the invalid should not indulge in anything but the plainest dishes;—pickled salmon, cucumber, and salad are prohibited.

The nutritive properties of various kinds of food have, of late years, formed the subject of much investigation. Northern nations depend, for their existence, on oil and tallow, in various shapes; and oleaginous matters, such as cream of milk, oil of the cocoanut, and of the cod's liver, have been very extensively administered as remedies in consumption.

All oleaginous substances are nutritious, and *heat-givers,* in comparison with those that contain little or no oil, as in the case of certain vegetables.

The action of oil on the system is threefold: First, it assists in maintaining animal heat; secondly, it is essential to the adipose tissue, which is necessary to the health of the body, and its decrease accompanies serious derangement of the system; thirdly, its presence seems to be necessary to the development of the nervous and muscular tissues, and all containing albumen; which accounts for its beneficial action in diseases attended by emaciation, as consumption.

A small quantity of oil in the food appears necessary to the healthy digestion of solid matters; while a large quantity frequently interferes with that process. When taken in larger quantities than needed by the system, or when formed from amylaceous and saccharine foods, it accumulates in the tissues, producing corpulence. This condition may be prevented by the diminution of starch, sugar, butter, and fat in the food; by a more free oxidation of the blood; and abstinence from alcoholic beverages, which seem to act injuriously, by arresting the process of oxidation.

TABLE IX.

Quantity of Oil, or Fat, in 100 *parts of various kinds of Food.**

Rye	1·0
Barley	0·3
Wheat	1·2
Rice	0·7
Lentils	2·0
Beans	2·0
Peas	2·0
Maize	7·7
Oats	5·7
Tea	4·0
Milk	7·0
Beef	30·0
Mutton	40·0
Pork	50·0
Veal	16·0
Fish	7·0
Cheese	25·30
Bacon	62·5
Butter	100·0

Closely connected with this part of the subject, is the question of the *quantity* of nutriment that is found in different substances. When the digestive powers are taxed, to render the food that is taken profitable to the system, it is sometimes necessary to employ those articles that yield the largest quantity of nutriment, in proportion to their weight or bulk.

---

* Dr. Lankester, lectures at Royal Institution.

The following table, X., gives the composition of certain vegetable substances. It will be seen that they vary greatly, as *flesh-formers*, and *heat-givers*. The analysis is on the authority of Dr. Lyon Playfair. Table XI., on the same authority, shows the *equivalents* of certain articles, as regards the nutriment they contain, and Table XII. the composition of butcher's meat.

TABLE X.

Composition and Quality of certain Vegetables as Articles of Diet.

	Water.	Flesh-formers.	Heat-givers.	Mineral Matter.	lbs.
Wheat-flour	13	15	70	2	100
Barley-flour	13	12	70	5	„
Oatmeal	14	17	64	5	„
Maize	13	12	72	3	„
Rye	13	15	70	2	„
Rice	13	8	78	1	„
Buckwheat	13	10	75	2	„
Lentils	13	26	59	2	„
Peas, dry	18	26	50	6	„
Beans, dry	19	26	49	6	„
Potatoes	75	3	20	2	„
Carrots	83	2	13	2	„
Parsnips	80	3	15	2	„
Turnips	84	3	12	1	„
Cabbage	86	4	7	3	„
Tea, dry	5	20	72	3	„
Coffee, dry	13	17	65	5	„
Cocoa-nibs	6	10	81	3	„
Bread	42	8	48	2	„

TABLE XI.

Equivalents of Vegetable Food, containing the same amount of Flesh-formers—5oz. of Flesh-formers being required to restore the daily waste of the body—are contained in the quantity specified of each of the following substances.

			Value.					Value.	
	lb.	oz.	*s.*	*d.*		lb.	oz.	*s.*	*d.*
Wheat-flour	2	1 ...	0	4½	Potatoes ...	20	13 ...	0	7
Barley-flour	2	6 ...	0	4½	Carrots	31	4 ...	2	6
Oatmeal......	1	13 ...	0	3	Parsnips ...	15	10 ...	1	1
Maize	2	9 ...	0	7½	Turnips	17	3 ...	1	8
Rye	2	3 ..	0	6	Cabbage ...	10	6 ...	0	6
Rice	4	13 ...	1	2	Tea, dry......	1	11 ...	6	9
Buckwheat	3	10 ...	1	0	Coffee, dry...	2	1 ...	2	9
Lentils	1	3 ...	0	5½	Cocoa-nibs...	3	2 ...	3	0
Peas, dry ...	1	5 ...	0	2¾	Bread.........	3	13 ...	0	6
Beans, dry...	1	5 ...	0	2¾					

TABLE XII.

Showing the composition of Carcasses of certain Animals, excluding the head and feet, except in Pigs.

ANIMALS AS FATTENED FOR FOOD FOR MAN.

	Mineral Matter.	Dry Nitrogenous Substance.	Fat.	Total Dry Substance.	Water.	
Calf	4·5	16·5	16·5	37·5	62·5	100
Bullock ...	5·0	15·0	30·0	50·0	50·0	100
Lamb......	3·5	11·0	35·0	49·5	50·5	100
Sheep......	3·5	12·5	40·0	56·0	44·0	100
Pig.........	1·5	10·0	50·0	61·5	38·5	100

Intimately connected with, indeed inseparable from the matter of food, is the science of cookery. Nature gives us the ingredients, and endows us with reason to apply them to our own use. She gives air, water, light, heat, food; but it is the genius of man that turns them to account for his benefit and advantage. It is this that distinguishes the civilized man from the savage. As far as their simple elements are concerned, the telegraph, steam-engine, and gas exist in the centre of Africa or South America, as well as in Europe; but it is the hand of science that elicits the latent spark, that brings forth their physical properties, that puts the matter into motion.

So it is with cookery, the best articles of food are allowed to be wasted by neglect of this useful science.

Man has been distinguished from the brute creation in various ways. Ovid says, he is characterized by walking erect, and having a sublime countenance. The faculty of speech is the peculiar mark, according to others. Some contend that the *inability to swim* distinguishes him, as all the lower animals possess this power; while very many ignoring his great intellectual attributes, and passing by the signs above recited, declare that he is characterized more distinctly than by any other test, by the fact of his cooking his victuals.

Cookery is unquestionably a high art, a proof of intelligence and civilization. Nations that excel in the fine arts, or in the useful, excel also in this. The lower we descend in the scale of humanity, the less perfect we find it, and when we reach the lowest step, as in the Esquimaux and the Cannibal, it disappears altogether.

England is very deficient, practically, in this branch of useful knowledge, though, as regards materials, we are second to none. It is cultivated, as it deserves to be, in most civilized countries; whereas in this country it is left, for the most part, to uneducated female servants, whose whole knowledge of it is derived from self-teaching, with very bare opportunity of learning, or from chance instruction. The experience of generation after generation, is thus thrown away, and we make no advance in this useful, this indispensable art. There are two kinds of cookery, the luxurious and the economic, very different in degree, but not in principle. One places on the table the most *recherché* dish, regardless of expense; the other, for a shilling, provides a wholesome meal for a family. That presides at the tables of the rich, this blesses the cottager's humble board.

The principle applies equally to animal food, and to vegetables. M. Soyer, the eminent French artist, dedicated his writings on the subject to the "Daughters of England," in the hope that they would devote some attention to this branch of useful knowledge. In Edinburgh, and some other capitals of Europe, it has long been the custom for *ladies* to take instruction in the science. From them it is transmitted to their female servants, the result being in every way highly satisfactory. Indeed, unless it be effected in this way, it is difficult to divine how the object is to be attained. Cooking is a practical art, not to be learned from books; if it were so, servants would not take their instruction from them, preferring to take a spoonful of this, and a pinch of that,—the old rule of thumb in fact,—as their predecessors did before them.

The subject is not mentioned here, with a view to the gratification of sensuality, but strictly for the promotion of health. Food, properly cooked, is half digested; whereas, that which is crude, hard, and unsavoury, is not only not profitable, but a positive poison.

It is scarcely necessary to say, that, the food selected for use, should be of the best quality. To partake of animal food that is "dubious," or vegetable, that is unsound or stale, is absolutely dangerous even to persons in robust health.

In London, we may procure every article in perfection, except dairy produce and green vegetables. The milk is not unfrequently supplied by ill-fed animals, confined in close sheds and stables, which never breathe the outer air, and perhaps never remember to have seen a green field. The railways, however, and the sanitary movement are gradually rectifying the evil.

The green vegetables, from the very confined, totally inadequate, wholesale market accommodation in town, are thirty-six hours, from their being gathered to their being brought to table, and often much longer,—this, in summer, is a serious evil.

Cheese, as an article of diet, should be taken but sparingly, and not at all unless of good quality; as a general rule, it is the most objectionable form in which milk can be taken. Little has been said respecting pastry and puddings; indeed, the less said about them the better. When the digestion is weak, they should be totally proscribed. A light milk pudding, made up of bread or tapioca, is sometimes useful when a person is rising from a sick-bed; but for one that is innocuous, twenty are injurious. All containing dried currants are particularly objectionable.

Certain condiments are useful at meals, if not taken in excess, such as salt, pepper, mustard, &c.; pickles should be avoided.

Ripe fruit is invaluable; it is agreeable to the taste, easy of digestion, and nutritious; it sits lightly on the stomach, and assists the action of the bowels. Some kinds are more wholesome than others; strawberries, raspberries, gooseberries, apples, pears, and grapes, are better than stone-fruit, though peaches form an exception to the rule. Few persons dislike fruit, and it is rare to meet with inconvenience, at least in adults, from its being taken in excess. It may be taken at all hours, and at all seasons of the year. It is most grateful in hot weather, taken early in the morning or late in the evening, when it also has a salutary effect on the action of the bowels. It supersedes wine, and other fermented drinks in summer, if not at other periods of the year, which is a most valuable as well as economical property. Indeed, nature seems to provide it at times when alcoholic drinks are most objectionable. Nuts are very hard of digestion, and dried fruits should be selected with caution.

Fruit seems one of nature's choicest luxuries: in it we have a delicious edible that can neither be adulterated by the trader nor kept for the exclusive use of any one class. It is adapted to persons of all ages and all temperaments, in every clime. It is acceptable in health, and most grateful in sickness: we clutch it in our cradle, and enjoy it in our old age.

By scientific management, we convert it into wine; nay, in warm climates, nature saves us the trouble of doing this; the fermentation in such places being spontaneous, man's aid is scarcely required in producing the most exquisite beverage. According, however, as this gift is used, it becomes a blessing or a curse. May we not hazard an opinion, that our first parents were permitted to partake of the fruit of every tree in the garden, but were forbidden to indulge in the fermented juice? Whether such an explanation of the narrative be admissible or not, it is indisputable, that the abuse of "the juice" has been a curse to all succeeding generations, from the creation to the present day.

Drinks are necessary, or luxurious. It has, however, been too much the custom to identify these two characteristics in fermented liquors. Men uphold the principle of their utility pretty broadly,—because they *like* them. There is little doubt, however, that, except when taken medicinally, people would be as well without as with them. Benjamin

Franklin was one of the first to maintain this opinion. The same principle has been strenuously upheld by Buckingham, Gough, Dr. Carpenter, and many others in England, and Father Mathew in Ireland. The virtue of alcoholic drinks is found to consist exclusively in their *stimulant* properties; they contain little or no nutriment. That stimulants are agreeable to certain temperaments, especially when combined with the peculiar delicacy of flavour derived from the grape, as in wine, is not disputed, but that is quite another affair.

Sugar is highly nutritious wherever it exists; consequently all beverages that contain it are more or less nutritious. Let the saccharine principle, however, undergo the process of vinous fermentation, and the liquor is entirely changed: instead of affording nutriment, it possesses little else than stimulant properties. It ceases to belong to the class of necessaries of life, and becomes a luxury. The conversion of sugar, as it exists in newly-brewed malt liquor for instance, into alcohol, and carbonic acid gas, by fermentation, is clearly shown by the following simple table:—

Three atoms of sugar go to form one atom of alcohol, and one of carbonic acid gas, thus:—

	Oxygen.	Carbon.	Hydrogen.
Three atoms of sugar contain	3	3	3=9
These, by fermentation, are converted into—			
One atom of alcohol, containing	1	2	3
One atom of carbonic acid gas, containing	2	1	0
	3	3	3=9

As stimulants, however, alcoholic drinks are invaluable medicinal agents. In the slow recovery from severe illness, where the assimilating powers are barely equal to their duty, a little wine, judiciously administered, proves a powerful remedy; and in cases where the vital powers are all but extinguished, by a person being immersed in water, or azotic gases, or from loss of blood, a small quantity of spirit might be the means of saving life.

When a person is in good health, there is no valid objection to these drinks being taken as luxuries; but they have no claim to be considered as necessaries of life. Where their use leads to the demoralizing of character, and vicious habits, they should be most stringently proscribed.

Of late years, the *fashion* has crept in, of administering stimulants to the sick, in large quantities, and almost promiscuously. It is wonderful how all our thoughts, feelings, habits, and customs, are enslaved by this tyrannizing influence. One would think that the human body, like that of any other animal, would be better kept by a strict adherence to certain rules; but fashion prevails even here. The Brunonian system of giving stimulants, often tried, and as often thrown aside, is now in vogue; and patients who never knew the taste of spirits, are kept in a state, vulgarly termed, "between drunk and sober," to await their destiny.

If it be advisable to administer alcoholic drinks, care should be taken to ascertain what sort suits the person best; and it will be fortunate if his palate, and his digestion, agree on this point. Much may depend on the actual composition of the beverage. The following table shows the ingredients in various liquors :—

TABLE XIII.

Composition of certain Fermented Liquors, in 20oz., or one Imperial Pint.

	Water.	Alcohol.	Sugar.		Acid.	Colouring Matter.	Salt, Extractive, &c.
	oz.	oz.	oz.	gr.	gr.	gr.	
Brandy, pale	9½	10½	0	80			
Rum	5	15					
Gin, pure..............	12	8					
Gin, publicans'	16	4	0½	0			
Port Wine	16	4	1	2	T. 80		
Sherry, pale............	16	4	0	80	T. 70		
Sherry, brown..........	15½	4½	0	360	T. 90		
Madeira	16	4	0	400	T. 100		
Burgundy	17½	2½			T. 160	1	
Claret	18	2			T. 161	2	
Champagne............	17	3	1	133	T. 90		
Hock..................	17¾	2¼			T. 127		
Moselle................	18¼	1¾			T. 140		
Strong Ale	18	2	2	136	A. 54		
Mild Ale	18¾	1¼	0	280	A. 38		
Pale Ale	17½	2½	0	240	A. 40		
Stout..................	16½	1½	0	281	A. 54	131	S. 18 E. 408
Porter	17¼	¾	0	267	A. 45	54	S. 22 E. 402
Cider..................	19	1	0	400	M. 120		

T.—Tartaric Acid. A.—Acetic. M.—Malic.—*Kensington Museum Tables.*

When a person is accustomed to take a certain quantity of drink at his dinner, it is not easy to leave off the custom. It is therefore desirable that he should regulate the habit; for it is highly injudicious to take much fluid at this meal, especially if the digestive powers are not strong; some persons do themselves much injury by this practice. The stomach prefers receiving the food in that state of consistency that it can, by its peristaltic action, contract on, and compress the whole mass into healthy chyme. The more diluted the supply is, the more difficult is the task; the distention and dilution of the gastric fluid seriously weakening its powers; indeed, it appears that the process is retarded, until a considerable portion of the superfluous fluid is absorbed—drained off. The presence of much fluid, is one of the causes of a species of fermentation taking place, instead of a healthy digestion; an immense disengagement of flatus, and a mass of acrid unhealthy chyme, being the result of the operation.

Most persons are accustomed to take a certain quantity of drink at dinner, and, in moderation, there is no objection. Invalids should carefully study the quantity and the quality of that which they take, and not exceed the amount that is found to be best adapted to their particular requirements. They should take water, pure or mixed with spirit or wine, or they might take malt liqour, or whatever beverage is found suitable. Care should be taken that the drink do not leave a heated state of system on taking it, or create thirst; always remembering that with liquids as well as solids, the nutritious, not the stimulant qualities, are to be first considered—the whip and spur must not supply the place of *corn*.

People that habitually take spirits, or other stimulants, have more thirst than others: teetotallers, as they are called, seldom experience the sensation.

When it is said that persons in health can do as well without as with alcoholic drinks, it is not meant that these do harm, taken in moderate quantity; neither can any rule be laid down as to the quantity proper to be taken. We are gifted with reason to guide us as to the quantity we should take: if we do not employ it, we must take the consequences. The lower animals seldom or never transgress the instinct of their natures. If a person cannot otherwise regulate his appetite for drink, his only safety lies in total abstinence.

The difficulty of restricting people in their beverages is often very great. The tubercular cachexia that precedes consumption is often induced by this abuse. You have a person suffering from headache, bilious attacks, fastidious appetite, irregular, unrefreshing sleep, whose very complexion indicates considerable derangement of the liver, all arising from this cause, and yet have great difficulty to persuade him to forego his glass. He may, perhaps, promise to amend, and thinks to cheat the doctor, little supposing that the doctor is not the person really cheated.

The fermented drinks supplied to the lower classes at public-houses, are mostly pernicious; many of them are direct poisons, slow but certain in their effects. The composition of the two ordinary drinks, porter and gin, may be seen in Table XIII., at page 163. The porter, in an imperial pint of 20oz., contains three quarters of an ounce of spirit, nearly an ounce of "extractive," and about half an ounce of sugar. The extractive contains salt, treacle, sulphate of iron (copperas), tobacco, and other abominations. The gin, besides the small quantity of spirit, contains alum, sugar, and turpentine.

It is notorious that in London, of the 5,000 or 6,000 public-houses, it is next to impossible to obtain any unadulterated liquid. Why the government authorities do not watch over the poor man's drink and food, as they used to do, it is difficult to say. It is a matter for deep reflection, in reference to the moral and sanatory condition of the people. Other governments are accused of going too far in their surveillance of bakers and provision-dealers; whereas in England the ruling powers do nothing. Good sometimes arises out of evil, and there is, in consequence partly of the unwholesome character of the drinks supplied, a strong disposition manifested to dispense with them altogether. Temperance prevails much more than it formerly did, and public-houses are frequently at a discount. These used to be eagerly sought after, and high premiums were given to obtain possession of them; whereas, of late years, in London and elsewhere, many of them have been closed, for want of business. The quantities of spirits consumed are very great, as is well known. The following are the returns for the United Kingdom:—

Quantities of Spirits consumed in 1849.

	Gallons.		Gallons.	
England	9,053,676	or	·569	to each person.
Ireland	6,973,333	„	·853	„
Scotland	6,935,003	„	2·647	„

This return is of spirits (drunk as spirits), not contained in wine or malt liquor.

It is the received opinion, that, taking into account all the beverages used, the quantity of spirit annually consumed by each person is about three gallons—(Dr. Lyon Playfair).

It is well known that the staff of life, bread, is much adulterated, especially in the metropolis. In almost every European country, except England, the governments see that the people are supplied with a genuine article, and also that it is sold at a fair price, the assize being regulated once a week; and it may well be asked why the English should not have the same protection against fraud as the French and Germans.

The practice is, to mix alum with inferior flour, to make it appear as of first quality. It also gives consistence to dough that would otherwise be wet, and not disposed to form readily into loaves. The result is an astringent, unwholesome compound, hard of digestion, and leading to obstinate constipation of the bowels. It is almost unnecessary to add, that the effects are highly injurious to weakly persons, and to children in particular. Alum holds out another inducement to the unfair trader: it enables the flour to take up more water, and so to add to the weight of the loaf.

Much bread is unwholesome, from being manufactured with bad yeast. This substance is itself a staple commodity in London. It is made from brewers' yeast, dried and mixed with potato, and other ingredients, that readily undergo fermentation, and thus sold to the baker.

But it is highly imprudent to introduce into the stomach any substance ready to pass into a process of fermentation; all tendency that way should be guarded against; it is therefore of the highest consequence, that bread should not only be free from any mineral adulteration, but be free as possible from any article that may encourage fermentation during the process of digestion.

By Dr. Dauglish's patent (Jan., 1859) "aerated bread" is ingeniously manufactured without the aid of yeast. Carbonic acid gas is forced through the dough, giving it a spongy lightness, without recourse being had to any objectionable ingredients. The bread manufactured by this process (and now being sold very extensively) is extremely wholesome, and very palatable.*

Another necessary of life, water, as supplied to the inhabitants of towns, although not artistically adulterated, is often so impure that it cannot be drunk, without undergoing processes of subsidence and infiltration. Not only does it contain much mineral matter, but it is charged with animal and vegetable impurities, in such quantity as to render it unfit for use. The legislature has, however, been persuaded to look into this matter, and much benefit has already arisen therefrom.

---

* An analytical inquiry into the adulterations of food was instituted by the *Lancet*, in 1852; and in 1855, Mr. Schofield, in the House of Commons, obtained a committee to prosecute the investigation.

As regards diet, there is another point that requires attention. A mistake is committed by many persons, in not suiting their diet to the season of the year. There are many who take the same quantity, if not the same quality of food, both in summer and winter.

In high latitudes, the inhabitants require stimulating food. The Laplanders and Esquimaux could not keep up their strength, and the animal heat, unless they consumed large quantities of oleaginous food. In the torrid zone, on the contrary, the natives are vegetarians from necessity; their constitutions would not bear stimulants, either in meat or drink; though, in the depravity of their nature, they take these when they can get them; their ordinary food being rice, sugar, fruit, yams, and other vegetable productions. In our temperate climate, a reasonable admixture of animal and vegetable food is most advantageous. Our teeth prove that we may take either, and our reason dictates that we should vary our diet, according to the season.

An exclusive use of either, moreover, is followed by particular ailments. Too free use of animal food leads to plethora, gout, scurvy, and some other diseases; while scrofula, and defective development in every tissue and organization, are too often the lot of those who confine themselves to vegetable productions.

Lent was instituted in commemoration of our Lord's fasting in the wilderness; but independent of its divine origin, it is one of the wisest and best ordinances for the health of the body that could be devised. Were we to employ our reason more than we do, we should immediately see, that in the spring, when all animate nature bursts forth with renewed life, we do not require the same amount of stimulant food, especially with alcoholic excitants, as we do when the thermometer is far below freezing, and nature is in a state of collapse.

A little reflection would tell us, that as the blood warmed, less animal, and more vegetable food was requisite. And as to liquid stimulants, absolutely the less taken the better.

The early Christians are entitled to the gratitude of all succeeding ages, for their vigorous adherence to the institution; for, apart from its spiritual origin and purpose, it is most valuable as regards man's physical condition.

It would be well, therefore, if all persons kept Lent—well for soul and body. Some persons go on in the summer taking the same diet as in winter; and when the heat increases, interfering probably with their ordinary appetite, instead of having recourse to cooling diet and drink, they take stimulants, to create a fictitious desire for food. Brandy with cold water is a favourite persuader; and at table, highly-seasoned dishes are preferred. From the over-heated state of the system, cholera often supervenes, when more brandy is taken to keep *that* off; but this, as may be supposed, often hurries its victim away to his final account. Plums and other autumnal fruits are often blamed for being the cause of cholera; whereas, it seldom happens that those persons who take cooling fruits are attacked by this ailment—it is the free-liver that breaks down. Too great indulgence in fruit induces looseness of bowels; but that is very different from the disease arising from an overheated state of blood.

The effects of heat, whether of meat, drink, or climate, on the liver, are seen on our countrymen resident in India. There the same train of symptoms are observed as in those who make too free with stimulants in England, and it often happens that the evil is traceable in India to the same cause as at home, namely, to the abuse of stimulants. As has been already mentioned, however, we see a great difference in the fair, and the dark complexioned man, both in England and India. The former bears the heat better, and is apparently not liable to disease of the liver, nor scarcely any other organ; whereas the latter suffers seriously. But the fair-haired man gets his turn, and when his liver is inflamed, as happens in dysentery, typhus, and other types of fever, his symptoms seem aggravated. The natural inactivity of the liver in such persons—its *obstinacy*, if the term may be used, in resisting all extraneous aid to throw off the vitiated bile that may have accumulated in the hepatic duct and gall-bladder—gives a more severe character to the attack than when it occurs in a person of a different temperament.

To return from this digression: it is obvious that our health depends much more on ourselves than we are willing to admit. If people abuse the reason that God has given them, and place themselves, in this respect, far below the beasts of the field and forest, which rarely transgress their natural instincts, giving way, on the one hand, to habits of intemperance and sensuality, and, on the other, rejecting the kindly fruits of the earth, provided for their use at proper seasons, they entail on themselves and their progeny innumerable troubles, for all which they blame the fates, never themselves.

This weakness in human nature is very often the exciting cause of consumption. Many instances occur of some members of a family, who were addicted to drink, being cut off, while the remainder, though equally predisposed originally, and in whom the disease may have displayed a tendency to develop itself, have escaped, through great caution in their manner of living.

A rational system of diet, nutritious but not stimulating, generous but not luxurious, varying with the season, suited to the particular taste, requirements, and age of the individual, is one of the mainstays of health,—consequently a shield against consumption and many other ills that flesh is heir to.

A word of caution should be added—to avoid satiety. Both reason and instinct often fail in confining the appetites and passions within bounds. It was a saying of an old philosopher, of a former age, Cornaro, that "the meat left on the dish did more good than that which was eaten." There was certainly much point in the remark.

Finally, practical regularity should be observed. The habits should be trained to punctuality. This contributes powerfully to the proper working of the different parts of the human machine, maintaining the harmony of the whole system.

Punctuality is easily acquired, and more easily kept up. It should mark the hour of rising from, and retiring to rest; of all daily exercises, moral and physical; of taking meals; of recreation; and very strictly preside over the calls of nature,—which calls, coming with wonderful regularity, should be promptly obeyed, never postponed, for neglect in this particular is the forerunner of endless mischief, if not serious disease.

We are proverbially creatures of habit. We awake at the same hour; we know when dinner-hour has arrived, without looking at the clock; we fall asleep with the same regularity; even in illness there are alternations that return periodically.

People are said to be most solicitous in respect of their worldly interests: their first consideration is of their property, verifying the scriptural saying, "Where their treasure is, there will their heart be also;"—body and soul are secondary.

Punctuality is strictly observed in all that relates to bills and payments, and it would be well if the same principle were applied to their spiritual and corporeal concerns.

All nature undergoes oscillations between light and darkness, summer and winter, fully organized activity and hybernation. Man struts his hour on the stage, performs his "seven ages," and disappears.

At this stage of our subject, and before going into the medical treatment, I submit that the following inferences may be drawn.

The *causes* of consumption are hereditary predisposition; a humid, variable atmosphere; defective ventilation of dwellings and work-rooms; long and close companionship with persons suffering under the same disease;—either of which may be aggravated by circumstances, by privations, by mechanical injuries, by intemperance.

The *preventive remedies* are, a dry, bracing atmosphere; free exercise of the lungs and limbs in the open air; capacious, well-ventilated dwellings and work-rooms; nutritious diet, embracing a full proportion of animal food; and temperance.

CHAPTER V.

MEDICAL TREATMENT.

The medical treatment advocated in this treatise, is simple in the extreme. It is wholly comprised in the administration of tonics internally, and the application of epispastics externally.

Few diseases have undergone what may be called experimental treatment more than consumption, which has arisen from its nature having formerly been but imperfectly understood.

It is only since the present century began, that its real nature has been known. The treatment now is based on rational principles, instead of being conducted on speculative grounds, and a corresponding success has followed.

It was the custom to direct attention exclusively to the chest;—to relieve cough by drugs, often of the most nauseous description, by sedatives, emetics, or expectorants, was the sole aim and object; thus looking to effects rather than to causes.

Sir J. Clark was, perhaps, the first to point out that consumption was not a local disease—that the first cause of tubercle was to be traced to derangement in the assimilating organs, and not in the lung itself.

Having for many years paid attention to the subject, I feel called upon to state the result of my observations; the more especially as the method of treatment adopted, and which has proved most successful, has not been employed generally, nor, as I consider, to the extent it deserves.

As pulmonary consumption depends immediately on false assimilation and tuberculous deposit, interfering with the organs of respiration in discharge of their duty, it is obviously the first point to stop the progress of this morbid process; and this appears practicable only by strengthening the system generally.

The *method* of giving tone and vigour to the frame must depend on the particular constitution and temperament of the person. Individual symptoms cannot be our guide. One great paramount object is to be kept in view, namely, the maintaining the physical strength. Air, diet, exercise, and repose, with the aid of a very little medicine, are the means of cure; and unless they avail in accomplishing this purpose, the chances in favor of the patient are but slender.

It is one of the first objects to see that the assimilating organs are kept in healthy action. All remedial agents must be brought to bear. Beginning with the moral, the mind of the patient must be kept in a state of cheerfulness and hopeful expectancy, and supported by all the assurances of recovery that can fairly be given, which is not a very difficult point to attain, for the buoyancy and elasticity of the mind, always leaning towards a favorable result are proverbial, and it is wiser, as far as can be, to sustain the hopes, and to impress on the patient the great probability of his recovery. Some persons object to a medical attendant encouraging a patient, unless there is a positive prospect of recovery, contending that the truth should be told, no deception employed, and so forth. Such persons belong to the class commonly called *croakers*, and are dreadfully depressing agents in a sick-room; their services should be of a high order, in other respects, to entitle them to be retained about an invalid; should they not belong to the family, they should not be admitted to the house.

An agreeable companion is invaluable: one who can anticipate the wants and wishes of the invalid, quietly, without noise and parade—who can assist in devotional exercises, arrange the duties, the employment, or amusement of the day, and take the colloquial part if friends should drop in, thereby saving the patient the exertion of speaking, or even of thinking,—provide the meals, and bring the medicines, without previous consultation, and, indeed, save the invalid from all thought, care, and trouble.

Some regard, however, should be had for the companion herself, or her health will suffer, from the confinement to the sick-room, and close attendance on her charge. She ought on no account to sleep in the same room, or take her meals there; she should have regular out-of-door exercise, and go occasionally into the society of her friends.

Whether from contagion, or other causes not sufficiently clear, we cannot always say, but many instances are on record, of wives, husbands, and other relatives, attending on consumptive persons, falling themselves into the same labyrinth. A case of this kind is mentioned at page 127.

The invalid should be at *home,* surrounded by his family and friends. In the event of there being any tender attachment, that should be seriously considered, and, if practicable, recognized and sanctioned. Many an instance occurs of females being sacrificed on this point: either there is no reciprocity of feeling—which is the most unfortunate case that can occur,—or the parties occupy different positions in society, or some other obstacle intervenes, presenting an insuperable bar to a union. In such a case the destroying influence prevails: the unhappy girl is consigned to an early tomb, the victim of a "broken heart." Cases occur, wherein it is impossible that the wishes of the person can be met; matters must then take their course, and when all is over, conflicting feelings and vain regrets are the lot of the surviving friends.

When it is said a patient should be at *home,* it means, he should be with his family; for it might be, and often is, expedient to change his residence.*

In prescribing for a person suffering from consumption, it is obviously an important object to subdue the cough, if possible, that he may get his natural rest at night, and to assure him, moreover, that one bad sign is disposed of. But it is indispensable, while accomplishing this, that the general strength be sustained. It is plain that if antimony, squill, ipecacuanha, or other nauseating drug, be introduced into the stomach, the appetite for food, on which so much depends, is checked, if not altogether destroyed; whereas, it is essential that the relish for food, as well as the digestive functions and assimilating powers, should be assisted, rather than interrupted.

---

* The absolute necessity of free ventilation in apartments occupied by consumptive persons, is insisted on in a former portion of this treatise. The following circumstance should have been

This point, the removal of the *cough*, is to be attained most effectually by counter-irritants, applied on the surface of the chest; and while this is being done, the system must be braced by the administration internally of grateful, aromatic tonics; otherwise, it would suffer from the outward application.

---

mentioned there, but it did not come to my knowledge until that part had passed through the printer's hands.

In his evidence before the health commission, Dr. Arnott says,—"A new house was built in the Zoological Gardens for the monkeys, and no expense spared. The ventilation was very imperfect. * * * When all this was done, about sixty healthy monkeys, many of which had already borne several winters in England, were put into the room. A month afterwards, more than fifty of these were dead, and the few remaining ones were dying. * * * From the time, the monkeys went into the room, until they died, they could not have had a single breath of fresh air." The *post-mortem* examination proved that these monkeys all died of consumption; so that we have a practical proof that this dread disease can be brought on at will.—*Edinburgh Review*, January, 1860.

It has been my practice to combine these two medicinal agents in the same prescription, at the earliest moment the case has come under my direction; the results have been most gratifying, in almost every instance, especially when the treatment may have been of a preventive, rather than a curative character.

I am well aware that counter-irritants have long been employed, and tonics likewise; but I doubt if the combination here advocated has been duly practised.

Many practitioners have devoted their time and attention to the treatment of consumption, and empirics have often come on the field. One of the latter class, St. John Long, obtained great notoriety in London, in 1829, by the employment of a liniment composed of strong acetic acid and turpentine, as a remedy for the disease, but causing the deaths of some persons, who were found to have been afflicted with bronchitis, and not consumption. He was tried and punished for the offence. The principle he adopted was not new, nor was it useless; but from his ignorance of the structure of the human body, and of the power of the ingredients employed (he being by trade a house painter), he did mischief by the misapplication of them. He died of consumption himself, about two years after his conviction.

The chief end of all treatment is, to maintain the strength, to assist nature in keeping up a healthy assimilation, and to prevent that fatal morbid process, the deposition of tuberculous matter in the tissues of the body.

As was observed just now, the strength cannot be supported if the patient swallow, three or four times a day, depressing or nauseating medicines; nor unless he gets natural sleep. Indeed, when the cough is frequent, the nights seem to exhaust more than the days, the inability to sleep inducing feverish restlessness, profuse sweats, and general depression of the system, constituting one of the worst conditions a person could be in; and unless refreshing sleep and a natural appetite can be secured, the whole frame must give way.

To obtain relief from cough, I have been in the habit, for several years, of employing tartrate of antimony externally, not in the manner adopted by the late Dr. Jenner, and others, in an ointment, but applied in the form of plaster. The reason for so doing has been, that if the application is to be of any service, it must produce considerable irritation on the skin. When directed to be rubbed in, in the form of ointment, it soon produces a slight smarting, and the rubbing is discontinued, partly from the pain inflicted by subsequent friction, and partly from the fact of the desired effect, as it is considered, being attained, whereas, the effect is insufficient, and a much greater must be produced, to arrest the morbid process going on within. This may be done with less inconvenience and pain to the patient, and beneficial effect, by means of the plaster, and, in nine cases out of ten, it is strikingly successful.

The mode of preparing the plaster has been as follows:—On a newly-spread compound Burgundy pitch plaster, say six inches by four, the plaster being still warm, and not set, sprinkle four grains of tartrate of antimony, rubbing it well into the substance of the plaster with the fingers, or, if necessary, gently passing the warm spatula over the surface.

It is applied usually across the upper regions of the chest, under the clavicles. After having been on two or three days, it produces, in ordinary cases, more or less irritation, but not sufficient to cause the patient to complain. After a period, varying from five to ten days, according to the temperament of the person, the irritation amounts to smarting and absolute pain, when it should be removed. A plentiful crop of pustules is the result, perhaps of fleshy buttons, varying from the size of a half-pea to that of a sixpence. A pair of blunt-pointed scissors is used to break such pustules as are not already open, and a dressing applied of mild ointment, of lint, dry, or wetted with water, or, if the patient prefer it, a bread-and-milk poultice.

The direct effect of this application will be, the partial, if not the total, removal of the cough, immediately, or within two or three days; and so far the patient is rewarded for the pain and inconvenience he has endured.

The general effect is an increased excitement over the whole system; the pulse is raised from

100 to 110, probably, and there is slight fever: these are the drawbacks, but they are temporary.

On the other hand, the patient feels greatly relieved in his respiration, and the freedom from cough enables him to sleep through the night; so that, on the whole, he is in a decidedly improved condition, and the inconvenience of the plaster is in a fair way of being forgotten.

After a day or two the excitement subsides, and then it is that he feels the chief benefit of the application; for the pustules, buttons, or pimples, no longer give pain, though still acting as counter-irritants; he has little or no cough, sleeps well, and takes his meals with an appetite.

The plaster is a severe remedy; but that it *is* a remedy of great efficacy, I am thoroughly convinced. The proportion of antimony, four grains to an ordinary plaster, such as has been described, is about the quantity necessary for a man of from twenty to thirty-five years of age, of common temperament; for a female of the same age, half the quantity will be found sufficient. Persons of a dark complexion, and strong physical conformation, who have, in addition, a coarse, thick skin, require a larger quantity, to produce a corresponding effect.

The temperament of the patient requires to be carefully studied in using this application. In a lymphatic, nervous, susceptible subject, with a livid countenance, and much emaciated, we must employ the milder form. Even this will produce frequently much more effect than we either expect or wish; for, instead of pustules, or buttons, we find, on removing the plaster, sores, disposed to slough, and pouring out a copious purulent discharge.

This is a hyper-effect, which we should endeavour to avoid; for, though the cough is removed thereby, the wounds are slow of healing, and draw too much on the strength of the patient, thus interfering with one of the chief points in the treatment.

The advantage of these plasters becomes quickly apparent, not only to the medical attendant, but also to the patient and his friends.

After a lapse of time, varying from seven to twenty-one days, according to the effect produced on the skin and the constitution, the surface heals, and, not improbably, the cough returns.

Another plaster is prescribed, provided the skin has fairly recovered itself, but of a milder character, with little or no antimony. This is generally cheerfully acceded to by the patient; the beneficial effect of the former application having been demonstrated beyond a doubt.

In many cases that have come under my notice, patients have asked for a repetition of the plaster, though several points or patches remain unhealed from the former application. In this case, pieces of lint, or adhesive plaster, exactly the size of the patches, are laid over them, and the new plaster laid over all. After a time, longer or shorter, according to the temperament and general sensitiveness, it is again removed, and the same dressing employed.

Occasionally, patients suffer severely from these applications, and dread a repetition of them, when, of course, it would not be urged.

In one case, where the subject of treatment was a youth, over-indulged by his parents, and of a wayward disposition, I incurred his deep displeasure, and, although the application had been decidedly beneficial, his anger overcame his reason, and I ceased to be his medical attendant; this result occurred to me but once—in general a recurrence to the plaster has been readily consented to, if not solicited.

I have had cases wherein as many as four or five have been used in succession; and others, where the disease had been arrested, the patient enjoying tolerable health, they had been kept in readiness to be put on, on the first threatening of mischief, at his own discretion.

In one case (Lichfield, case No. I.*), the patient applied every six or twelve months, for several years, for a repetition of them, and, eventually setting the disease at defiance, became robust and strong.

The plasters, in some cases, cause little or no inconvenience, though they may have been on longer than usual;—nay, further, on their being removed, the effects have been found greater than was anticipated; ulcers and wounds are seen; and yet the patient has borne them, not only patiently, but without having suffered greatly. After such an effect as this, scars are left, as from confluent small-pox. These are very objectionable with females, as disfiguring the neck and bosom, and obloquy is thrown on the medical attendant, when all danger has passed away. The censure, however, such as it is, comes from the patient herself, not from her friends.

---

* See Appendix.

The plasters may be oblong, or shaped like an hour-glass, and placed transversely on the chest, so that the chief strength of the application is exercised beneath the clavicles on the apices of the lungs, where, in a large majority of cases, tuberculization commences.

In one case, a young lady, who was restored to health by them, kept the plasters by her, and occasionally cut them, applying a portion on one side the chest or another, according as mischief threatened, the result always proving that her diagnosis was correct, and the application invariably gave relief.

Occasionally so much of the antimony is absorbed as to produce nausea; this effect is, however, rare: when it occurs, the remedy should be discontinued, even though the cough be giving way.

The plasters may be applied on the posterior surface of the chest, under the scapulæ. They do not afford as much relief applied here, as on the anterior portion, in checking the short, characteristic cough of consumption; but should there be any asthmatic tendency combined with the tubercular symptoms, this mode of employing the remedy is very efficacious—indeed, from what I have seen, there is scarcely a more direct or certain means of giving relief in asthma, than the application of this plaster along each side of the spine, on the posterior wall of the chest. It appears to allay the morbid irritability of the intercostal nerves, as well as those of the bronchi, air-tubes, and diaphragm, and so to relieve the spasmodic contraction of these parts.

In extreme cases, in confirmed consumption, as it is commonly called, where the person is much emaciated, and the general powers greatly exhausted, the remedy is severe; but in the earlier stages, or when the emaciation is not remarkable, it is not so, more especially if proper precaution be used, to adapt the strength of the plaster to the strength of the patient.

Admitting that it is a strong remedy, will any one contend that it should be discarded on that account? Does not the character of the disease demand strong measures? The principle here inculcated is, that prompt and vigorous treatment is indispensable to secure success. The application of plasters, and other counter-irritants, seems to me not to have been carried out to the extent it deserves.

It is usual, when a plaster, ointment, or blister is prescribed, to direct that it be applied over the surface of the chest generally, including the sternal space. There appears a want of discrimination here, for, as in a large majority of cases the tuberculous deposit commences in the apices of the lungs, on the mucous lining of the bronchi, and in the bronchial glands, the counter-irritation should certainly be chiefly employed over these.

The stethoscope cannot inform us where the deposit actually commences, or, in fact, detect the tubercle in its earliest stage; still, we know, from a variety of symptoms, as well as from subsequent ocular demonstration, that it is in these portions of the lungs the mischief almost always begins; we are, therefore, safe in applying the remedy over these parts.*

As was just now observed, the plasters are applied of an hour-glass shape, transversely, the two lobes covering the two subclavicular regions. The sternum thus escapes much of the irritation, though it is not unfrequently necessary to apply the remedy immediately over it; as, when a high degree of irritability of the bronchi leads to frequent cough, or where there is a sense of oppression in the anterior mediastinum, accompanied by palpitation, which state of things is too apt to follow an obstruction to the free circulation of the blood through the lungs, caused by tuberculous deposit.

Whether the antimonial plaster so applied acts only as a counter-irritant, or whether, by the absorption of some of the mineral, the irritability is allayed, I cannot say; but the patient is certainly and greatly relieved, and the relief continues a longer or a shorter time, according to the stage of the disease, and the physical condition of the patient.

---

* When the anatomical lesion becomes manifest, it is almost always too late for therapeutics to effect a cure. Disease must be combated in *diathesis*, in its tendency, and in its state of power as a dynamic agent; this is the form, and the degree under which it must be met; it is too late when the stethoscope and the plessimeter become of service as diagnostic agents.—*Gazette Médicale*, January, 1860.

One of the immediate advantages is freedom from cough, either partial or complete; this leads to undisturbed, refreshing sleep. The expectoration is greatly diminished also; and should there have been scarlet or dusky-red streaks of blood in the sputa, they most probably disappear; indeed, a positive check is given to the disease, not merely to the symptoms, but to the morbid action that is going on in the parenchymatous structure of the lungs, or in the air-passages.

As far as my observations have gone, there is as great a change produced as by blood-letting in pleurisy, and the patient readily acknowledges the advantage obtained by the application, though still suffering pain therefrom.

When it is said that much benefit accrues from this treatment, it is not meant to be implied that other therapeutic means should not be adopted at the same time, or to follow up the advantage that has been gained,—indeed, repetitions of the same treatment may be necessary.

What I am anxious to establish is, the principle that no other means possesses the power of doing as much, or gives the physician the opportunity of employing tonic remedies of various descriptions—the alleviation from cough, and refreshing nights' rest, opening the way to their adoption and use.

That the *kind* of counter-irritation here recommended is highly efficacious, is proved by the relief occasioned by the accidental supervention of exanthematous diseases in persons laboring under pulmonary consumption. Irritation, to a great amount, may be, and frequently is, produced by other and more expeditious measures, followed by full and copious discharge from the surface; but this is not the means most likely to give relief. The slow and gradual production of pustules, in ample numbers, over the seat of mischief, lasting many days, and passing through stages analogous to those observed in the eruptions of natural diseases, appears to exercise a more direct and positive influence in arresting the development of tubercles.

There are many cases on record, of persons suffering from what has been termed confirmed consumption, that is, when the tuberculous deposit is becoming soft and purulent, and the cough, hectic, and general decadence have been painfully marked, having been suddenly, and almost miraculously saved from destruction, by an attack of small-pox or chicken-pox. One disease has proved antagonistic to the other, and has effectually arrested its progress.

It might be asked, whether or not vaccination might be employed, with a view to divert the tuberculous deposit. Were vaccine pustules induced in considerable numbers over the chest, it would probably lead to a diversion in favor of the patient. The counter-irritants that do good, I have remarked, are those which cause a *purulent* discharge. Mustard, cantharides, ammonia, and others of that class, fail to give the relief that is obtained by the irritating plasters, and it is not improbable the slow action of the remedy, and the character of the discharge, are the *rationale* of its success.

Supposing the disease to have been checked by the means recommended, it is more than probable the system undergoes a certain amount of excitement. In this case it is judicious to suspend operations for a day or two, and attend only to the comfort of the patient, by applying to the irritated surface, either dry lint, mild emollient ointment, or bread-and-water poultice. If the patient consent to *either* application, I have been in the habit of using the first-named, on the principle that the healing process should not advance too rapidly. The lint may be left on one, two, or three days, without being changed. If either of the two last-named applications be used, they should be renewed morning and evening.

It has already been observed, that the plaster has an advantage over the antimonial ointment, in being more easy of application, and more efficacious. It is superior to a blister, in being slow in its action, and more lasting in its effects, producing a purulent discharge from numerous points over the seat of the disease, instead of a hasty collection of serum under the cuticle in one spot. The blister may be called an acute remedy, suited to an acute disease; whereas, consumption partakes more of the chronic character, and requires chronic treatment.

Setons have been tried; but they take too deep a hold on an emaciated frame, and, moreover, draw from a single point, which tends to weaken the person, without producing corresponding benefit.

Synapisms relieve the dyspnœa attendant on consumption, and sometimes are useful when muscular pain supervenes; but, farther than this, I never saw them do good.

The plaster seems to meet the necessities of the case better than any other application: its slow and sure effect not only admits of, but, as it were, invites the employment of tonic remedies internally,

After a time, varying according to circumstances, the patient feels the full benefit of the plaster. The inflammation on the surface subsides, the pain becomes an *itching*, and he frequently detects himself *scratching* the part, even before the purulent discharge has ceased. The probability now is, that the cough is gone, and the patient becomes very sanguine of recovery. This is a very common result, if the remedy be applied early—before the general strength has sunk. If the disease has advanced considerably, and the strength consequently be greatly reduced, much caution is required in repeating the plaster; this, however, is often necessary, to give the patient a chance of ultimate recovery.

When the means employed have appeared to be attended with a certain amount of success, the next step is to secure the ground gained. The course herein recommended, as far as regards the administration of medicines, is simple in the extreme; it consists entirely in the use of such tonics as seem to agree with the system. After many trials of bitters, vegetable and mineral acids, metals, iodides, oils, and various specific medicines, the conclusion is arrived at, that it matters little which is employed: at any rate, the palate and the stomach must settle that matter, and the remedy that proves most suitable will, of course, be taken. The first object is to promote and assist digestion, which may generally be done by means of some light bitter infusion, with the addition of a few drops of dilute sulphuric acid. I have been in the habit, after trying all the tonics in the Materia Medica, of using the gentian or calumba thrice a day, acidulated, with the best effect, beginning one or two days after the plaster has been removed, provided any febrile excitement that may have been caused thereby has subsided.

In a majority of cases, the tonic may be given the day after the removal of the plaster, although the cough may not have entirely left the patient. I have often witnessed immense benefit arise from its use, in the very face of pretty severe cough, accompanied by dyspnœa, quick pulse, and hectic flush. It is scarcely necessary, however, to add, that the medicine tells more advantageously in the absence of these.

Some persons are of opinion, that to give a consumptive person, laboring under cough and quick pulse, tonics, and a nutritious diet, will aggravate the symptoms, and tend to shorten his days: such, assuredly, is not the case. Should he have taken previously, expectorant, emetic, or sedative medicines, he will very quickly declare how much better the tonics suit him.

The cough may, perhaps, continue; but the effects of the plaster are still operating and doing good, and the probability is, all the local symptoms will give way: then is the time to push the tonic remedies and a nutritious diet.

Sometimes it is necessary to change the bitters, and also the acid; although this class of medicine may be continued without change longer than any other.

The nature of the disease displays a want of tone in the system; all the solids and fluids of the body show a deficiency in fibrine, and in red particles in the blood, all indicative of a scrofulous diathesis and general weakness;—iron, therefore, should be employed freely. In young persons of either sex, as soon as an opportunity offers—that is, as soon as the stomach consents to take and profit by a nutritious course of diet, iron, in some form or another, should be administered in good quantity; and to do this it is easier given in the solid, than the liquid form. I have employed the carbonate, citrate, hydro-chlorate, iodide, &c., but have found the common pill, *Pilula ferri composita*, of the London Pharmacopœia, in 5-grain doses, twice or thrice a day, answer admirably. It has one great advantage over other forms of the metal, inasmuch as the potash, with which it is combined, has an aperient, and consequently a salutary effect, in addition to the benefit to be gained from the use of the iron, which, of itself, rather tends to constipation.

One form may be found to suit a person better than another, but iron should be the remedy.

This powerful tonic should be used as a prophylactic, long before any pectoral symptoms of consumption appear, where the person is pale, weakly, and evidently deficient in tone. There is no necessity to wait until a girl becomes chlorotic, or a young man begins to droop, before the remedy is employed. Taken habitually, for a proper length of time, for months, or even years, if found requisite, it appears to put new bone and sinew into the frame, and to stave off scrofulous disease, whatever kind may threaten.

Iron has been most used with females, and undoubtedly, where there is a deficiency of catamenia from anœmia, or too great profusion, the remedy is unique; but it is equally valuable in males, where we may have anœmia, as well as in the other sex.

Where consumption is apprehended, where we have debility, pallor, emaciation, and other indications, where, perhaps, one or two other members of the family have actually fallen into the disease, no medicine that we could employ holds out so fair a prospect of advantage as this.

The iron, by supplying an essential ingredient to the blood, keeps up the condition of every organ of the body, forwards their functions and secretions, and, in short, maintains the system in proper strength and vigour, repelling the very incipia of disease, and more especially that of a scrofulous nature.

It is not uncommon, when iron is recommended to a young person, that the suggestion is ridiculed; but this should be got over; and where a proper understanding exists in families, this is not difficult of arrangement.

Not only must the obvious outward signs be taken cognisance of, but the internal economy must be watched. The daily state of the bowels should be noticed, as it often happens with many people, that great irregularity prevails in this respect, for years, without the friends being made acquainted with the circumstance; and this is a frequent forerunner of the tubercular cachexia that lays the foundation of consumption. This derangement of the system must be rectified; to accomplish which, it may be necessary to use something more than common aperients. It is prudent to combine a mild alterative with them; for this purpose, *Hydrargyrum cum crèta* is one of the best, administered in small doses, with rhubarb, colocynth, scammony, or aloes, and a fair proportion of essential oil. The protoxide of mercury is not only the mildest preparation, but the chalk seems to soften its action, so to speak, and to increase its effect on the absorbents. It acts beneficially taken alone, especially with children, as is well known. I have been in the habit of giving it to adults, in three or four-grain doses, in pills, often with a view to anticipate constipation, with good effect, reserving the more direct cathartics till they were imperatively called for. This preparation of mercury, while it promotes the biliary secretions, appears to aid the assimilating function, and may possibly afford direct nourishment to the osseous system.

When a young man has grown rapidly, and attained, at the age of eighteen or nineteen, to the height of six feet, it is more than probable that his physical strength will be very deficient; that he will feel languid, indisposed to exertion, mental or bodily; that his pulse will be exceedingly slow, his breathing suppressed, his bowels costive, and the functions of the various organs, in fact, unable to keep pace with the external development of frame. In such a case, it behoves us to watch very closely the working of the machine, lest some part should become deranged; and we cannot be too careful that the respiratory organs, above all others, are doing their duty satisfactorily.

In such a case, the appetite not unfrequently fails, is fastidious and uncertain, which is a very unfortunate circumstance, so much depending on the stomach and the other assimilating organs, to supply a sufficiency of strength to the system. But the stomach, the centre of sympathy, as it is not inappropriately called, is both cause and effect in itself; if the general health be good, it does its duty well; if it do its duty well, the general health will be good; so that we must stand by, and should any part of the machine be in difficulty, we must give it the assistance it requires.

Many medicines have from time to time been lauded as being efficacious in the cure of consumption: as specifics, they have all failed, although some are undoubtedly useful in improving the general health. Emetics and expectorants were long esteemed as remedies; iodine, naphtha, tar, have had their advocates and their trials; all, however, ending in disappointment. Of late years, cod-liver oil has been held in high repute. This substance nourishes the body, and stops the emaciation,—one of the characteristics of this disease, and one watched with much anxiety by the friends of the patient. Whilst it fattens the person, it is doubtful if it adds fibrine to the blood, or supplies good bone and muscle. That it supports the system, and fortifies it against the encroachments of strumous debility, there can be no dispute. We have seen that in the northern nations of Europe, the natives enjoy an extraordinary degree of exemption from consumption, which must be partly ascribed to the climate, and partly to the great use of oleaginous food that rules in these places. In high latitudes, arctic travellers inform us, 20 lbs. of blubber is not an uncommon meal for one person.

The inhabitants of the torrid zone, with few exceptions, are equally free from the disease, without ever tasting animal food, which is attributable to the dry, balmy, pure air they breathe.

In England, where we require a miscellaneous diet, it is indispensable that those predisposed to consumption should mainly depend, for the preservation of their health, on a free use of animal food.

The therapeutic effects of the oil are most perceptible in those scrofulous subjects in whom the glandular system is chiefly affected.

At the Brompton Consumption Hospital (Report of 1850), of iron, naphtha, and cod-liver oil, the last was found to support the frame best and longest; but even where it added weight to the body, it frequently failed to arrest the progress of the disease.*

It may be observed, that this oil does not possess any specific power, even in supplying olein. All the animal, and, perhaps, also the vegetable oils, have the same property; mutton fat produces the same effect, taken in any convenient form; the same end is obtained, more agreeably, too, by the use of Devonshire cream.

Cod-liver oil was first introduced into medical practice by Dr. Percival, in 1771, as a remedy against chronic rheumatism.

It is not necessary that the oil should be swallowed as a diet or medicine. Cooks and carvers of meat in dining-houses, owe much of their obesity to the inhalation and cutaneous absorption of oleaginous matter; these persons are seldom gross eaters.

Fish oil has had, for a very long period—for centuries, the repute, in the Highlands and islands of Scotland, of being an antidote against scrofula. The free application, externally, was found, not only a preservative against this disease, but against consumption; for the two maladies were not then known to be identical in their pathological characteristics.

---

* *British and Foreign Medical Review*, April, 1850.

In the wool-mills at Galashiels, Dunfermline, Alloa, Tillicoultry, Inverness, and other places in Scotland, the work-people enjoy a perfect immunity from these diseases. They take no oil into their mouths; but their clothes are saturated with it. In this way their bodies absorb large quantities, and they inhale not a little in the form of vapour. So well known is this circumstance in the districts where these mills are situated, that young persons threatened with consumption, are sent to work in them, with a view to their being restored to health, and almost invariably with success. The same fact has been observed in many of the woollen manufactories in Yorkshire, Lancashire, and Somerset.*

Dr. Garrod states, that in his opinion, the cod-liver oil acts through its oleaginous principle, and not from the small amount of iodides it contains; and that any other oil, equally well suited to the digestive organs, will be equally efficacious.†

Dr. T. Thompson says, the *cocoa-nut* oil was found, at the Brompton Hospital, to be equally restorative, and, in some cases, even more so.*

---

* Dr. Simpson, of Edinburgh, first made known this fact.—See *Chambers' Journal*, March 12th, 1853.

† *Lancet*, December, 1848.

As has already been observed in this treatise, butchers, who eat largely of animal food, seldom fall victims to consumption; from which it is plain, that whatever tends to supply fibrine, and red particles to the blood, goes to support the system, and thus wards off the disease; but no local means seem to possess the same protecting power.

Sarsaparilla, taken for a considerable period of time, unquestionably exercises a most salutary influence on the constitutions of young persons, and more especially on young men, where the health has been impaired by irregularity and imprudence on their own part. How it acts, or on what organ, it is difficult to say. It seems to regulate the digestive organs, and to control the action of the liver,—in themselves very important helps. Its being agreeable to the palate is one recommendation, especially with a weakly person.

Cocoa, with abundance of milk, and sweetened to the taste, is a very feeding article of food. Many persons derive as much benefit from its use, as from the cod-liver oil. Clotted cream is taken medicinally in Cornwall and Devonshire, with the same view.

It frequently happens that the liver becomes unnaturally fat in its parenchymatous structure and membranes, especially in females. The secretory function is badly performed, and costiveness prevails. This is not unfrequently a forerunner of consumption. The circumstance must be closely watched, and alterative and general remedies employed. Here the taraxacum, with or without sarsaparilla, will be found a most useful remedy.

---

* Lectures, 1851.

There is another medicine which exercises a very great influence on this organ; namely, colchicum: its power, however, is so great, and its effects so depressing, unless administered with extreme caution, that it is inapplicable in consumptive cases, notwithstanding its quick and searching action on the liver.

The colliquative diarrhœa, which frequently comes on in the latter stages of consumption, is not the result of an over-secretion of bile, but is caused by the temporary suppression of the profuse sweats, further promoted by the aphthous state of the mucous membrane of the intestinal canal, which is frequently present.

The sole object of all medicine should be to strengthen the body; for, most assuredly, if the tone and vigour of the system can be maintained, the cough and other local symptoms will eventually subside.

Much might be said on the medical treatment of consumption; but I refrain from going more deeply into this part of the subject, on the principle that all medicine should, as far as possible, be avoided; that the dire disease should be met *in limine*, as it were,—prevented, before it has taken strong hold of the patient. It is then that the battle must be fought, to insure victory.

The great question of the *curability* of consumption remains to be answered. This was formerly considered to be impossible.

When a person once displayed unequivocal signs of the cold hand being on him, his friends abandoned all hope,—he was given up as lost.

Of late years, the pathology of the disease having been better understood, and the predisposing causes more thoroughly investigated, the question of curability has not only been revived, but found to be capable of favorable solution, under certain circumstances.

Before proceeding to deliver an opinion, the premises must be distinctly and fairly stated. If the tubercle be in process of deposit, whether in the lungs, the bronchi, the mesenteric glands, or elsewhere, and have not advanced to softening, or, at most, to suppuration, in any organ of the body, we are warranted in saying that, by the aid of well-directed therapeutic measures, the case is capable of cure.

Many persons go further, and say the disease may be arrested, even though the mischief has made much greater progress,—when, for example, the patient is expectorating strumous matter, thrown off by suppurating tubercles. Here, as in vexed questions generally, the truth lies in the midst,—most cases taken in time are saved, but not all;—most confirmed cases are lost, but not all; and it is encouraging to know, that some recover after all hope has flown—when they have been despaired of by medical attendants and friends.

I knew a gentleman, pronounced by several physicians to be in confirmed consumption, who, as a last resource, took a game certificate, and went off to the moors. For some months he was exposed to cold, wet, and fatigue—often immersed in bog to his knees, in pursuit of snipes. Marvellous to say, his spirit and daring saved him,—he ultimately recovered.

Other such instances are on record. I have known two, and all but hopeless cases they were, where young mothers were apparently rescued by suckling their infants; so that it is not too much to say, that there is ground for hope, even in advanced stages of the disease.

The healing art has made great progress of late, and to this must be ascribed much of the success that has attended the treatment. Nevertheless, however successful we may be in extricating a person from the fangs of the disease, the safer course is, if possible, to steer clear of danger.

Much light is now thrown on primary causes. We see how much Rutland, Hampshire, Cornwall, and Lancashire suffer from consumption; we also see how the elevated plains of South America, the northern shores of Africa, Sweden, and Finland, are exempt from it.

Having these facts before our eyes, it is our duty to profit by the information furnished by them, bearing in mind the maxim that Prevention is better than Cure.

APPENDIX.

CASES.

THE following outlines of a few Cases that occurred in my practice, illustrate the principles laid down in this treatise.

The main object has been, *prevention*, in individuals who were predisposed to the disease, or in whom unequivocal signs of its commencement have developed themselves.

In every instance, I consider, there is evidence of the method adopted having been attended with much success, even if it did not entirely arrest its progress.

The Cases are taken, almost at hazard, from amongst very many that came under my care. In describing them, a certain period of time has been suffered to elapse since they occurred, for two reasons:—first, it enables us to say, whether or not the benefit was permanent; and secondly, it is not always agreeable to friends of patients, that reports of their cases should be immediately made public.

CASE I.

Joseph Lichfield, æt. 14.—*June* 23, 1850.—A very tall boy; has been three months employed in a lithographic printing-office, where he has occasionally heavy weights to carry. His father died three months ago of consumption, after an illness of seven months. Complains of severe perpetual cough, with some pain in chest, extending to right shoulder and back; cough, accompanied by expectoration of mucous saliva; much emaciated; P.* 90; respirations 19; motions of ribs scarcely perceptible; AP. ordinary; B. regular; U. natural. On percussion, the chest resounded naturally, without perceptible difference on either side. On auscultation, the inspiratory sound loud and dry, the expiratory weak, and less than natural. He has grown several inches within last year.

Ap. pect. Ung. ant. tart., mitius.
To have mutton at dinner; bread and milk night and morning.

July 1.—Ointment has produced a few pustules of large size, which discharge freely; cough considerably diminished; P. 96—wiry; respiratory sounds longer than natural; no other morbid sound; night perspirations profuse.

Rep. Ung. Continue same diet.

July 4.—Extensive eruption, with abundant purulent discharge, of which he complains; cough very much diminished—almost gone; AP. ordinary.

Ap. Ung. calam. pustulis. Continue diet.

July 7.—Eruption copious, much discharge during night; coughs but rarely; P. 104; AP. good; B. slow; sleeps better than he did; feels somewhat sick after application of ointment.

Rep. Ung. ir. per diem; ap. Cataplasma per noctem.

---

* Ap. appetite. B. bowels. P. pulse. T. tongue. U. urine.

July 11.—Occasional cough; eruption drying up; AP. variable; B. rather confined; eats his meat with appetite, but dislikes the milk; P. 112; inspirations 20; respiratory sounds clear and distinct on both sides of chest.

Omit med. To continue meat. To take tea and bread-and-butter, instead of milk.

July 14.—Complains much of ointment; nights disturbed by the irritation; eruption very full; some of the pustules nearly an inch in diameter; AP. bad; cough diminished; B. confined; P. 128; inspirations 20.

Omit Ung. ir. Ap. pustulis Cerat. cetac. ol. ric. ℥ss. pro re nata sum. Same diet.

July 18.—Irritation from ointment subsided, but discharge continues; cough quite gone; AP. better; thirst; some large sloughs from pustules; B. not regular without medicine; sleeps well; feels stronger; U. rather high-coloured; P. 120.

Cont. med. and diet.

July 21.—Surface of chest healing; no return of cough; feels much better in every respect; B. regular; AP. good; P. 124; no night perspiration.

July 25.—Much improved in every respect, except the pulse, which continues quick—at present 116; AP. good; B. regular.

Ap. dorso Emplast. ant. tart., mitius.

July 28.—Eruption rising on back; P. 112; feels better generally.

Aug. 1.—Eruption full on back, and some discharge; no return of cough; AP. good; B. regular; P. 112; T. somewhat furred; sleeps tolerably well; sloughs on chest rather troublesome, two came away.

Rep. med. and diet. Plaster removed.

Aug. 8.—Some discharge from breast and back; feels weak; sweats about head, not over body; P. 108; AP. indifferent;

U. high-colored and albuminous; thirst; B. relaxed. At own request, had some oysters and little porter one day.

℞. Acid. sulph. dil. ʒj., ferri sulphatis ʒiss., aquæ ℥xij. M. ℥j. ter die sumend. Ol. ricini pro re nata sum.

Aug. 11.—Discharge continues, but much less; feels stronger; less sweating; AP. improved; P. 100; B. regular.

Rep. omnia.

Aug. 15.—Continues improving in every respect (own report); T. slightly furred; P. 104; slight discharge from chest.

Rep. omnia.

Aug. 18.—Discharge nearly ceased; feels better.

Rep. omnia.

Aug. 25.—No complaint; discharge ceased and eruption healed; P. 90—soft.

Rep. med. and diet.

Sept. 1.—Some pain in bowels—tenderness on pressure; U. has sometimes lateritious sediment—pain in bowels less at such times.

Omit med. ferri.
℞. Inf. gentian. C. ℥xij., Acid. sulph. D. ʒij. M. ℥j. ter die sum.
Meat diet.

Sept. 15.—Continues to improve.

Rep. med. and diet.

Sept. 22.—Continues to improve.

Oct. 6.—Some tightness in breathing—otherwise feels better; slight pain over chest; no cough, nor other morbid symptoms.

Ap. pectori Emplast. antimon. tart., mitius 6 x 5.

Oct. 13.—Tightness and slight soreness over chest—otherwise feels tolerably well.

Oct. 20.—No complaint, but evident delicacy of constitution.

℞. Pil. ferri C. gr. v., bis quotidie sum.

Nov. 3.—Some tightness of chest, and cough; respiratory sounds natural; AP. good; gains flesh.

Nov. 10.—Full eruption on removal of plaster (on five weeks); cough quite gone.

Cont. Pil. ferri, and full diet.

1851.—During this year he frequently called on me to show himself. Continued well, but liable to catarrh and cough, which, however, gave way to simple remedies. He continued the Pil. ferri for many months, with evident benefit.

Mrs. Lichfield, æt. 41.—*May*, 1852.—Mother of the foregoing, applied to me, laboring under all the symptoms of confirmed consumption. Living at a distance, I did not see her as frequently as I could have wished. Suffice it to say, in her case the symptoms made rapid progress, and at the end of three months from the time she first applied to me she sank.

The son, Joseph L., much distressed at his mother's death, was attacked with hæmoptysis *August* 20, and he lost a considerable quantity of fluid blood. Antimonial plasters were applied on the chest, while gentian and acid were administered internally freely; under which treatment he again rallied.

Sept. 6.—Another attack of hæmorrhage from the chest. On this occasion a blister was applied, and he took the acid medicine. He again recovered.

Dec. 13.—The cough returned; p. 100.

Antimonial plaster again applied on the chest.

Dec. 31.—Free from cough; feels pretty well.

He was furnished with simple Burgundy pitch plasters, to apply, at his own discretion, as a protection.

He remained in good health through the years 1853-4-5; after which I lost sight of him.

Here was a case of a youth, strongly predisposed to consumption, whose parents had both died of it, and whose rapid growth had greatly undermined his strength, carried through severe conflicts, and, as far as I could gather, ultimately saved. He was frequently threatened with cough, and fled to the plasters as a sure protection. In no case that I had seen had the sufferings from the remedies been greater; yet this did not deter him from the employment of them.

He was on several occasions seen by medical friends, who all formed the worst prognosis of his case, and were agreeably surprised at the result of the treatment.

CASE II.

Anne Carter, æt. 17.—*July* 30, 1849.—Servant; of ordinary conformation, well grown, but pale; fair complexion, with dark hair. Catamenia have not yet appeared; P. 90; B. regular; spirits good; has lost two brothers, also one uncle and four aunts on the father's side, all by consumption.

Has severe cough, and pains in the chest, headache, want of appetite, and great debility. Stethoscope detects no morbid sign in chest, except that the respiratory sounds are weak.

Ap. pect. Emplast. picis comp.
℞. Pil. ferri C. gr. x., divid. in pil. ij.; bis quotidie sum.
Haust. Decoct. aloes C., pro re nata sum.

Aug. 20.—Symptoms but little changed.—Cont. med. To have hip-bath every other night, and nourishing diet, at her own discretion.

Sept. 17.—Cough very troublesome; P. 100; other symptoms same.

Ung. Ant. tart. pect. mane et vespere infricandum. Cont. med. and full diet.

Oct. 15.—Great effect from ointment; cough much relieved; headache very troublesome.

Hirud. iv. temporibus applicand. Cont. med.

Dec. 31.—The cough having continued severe, the ointment was applied assiduously; catamenia appeared 24th December, and lasted five days; cough greatly diminished; feels better in every respect.

Feb. 18, 1850.—Cough still continues; mucous expectoration occasionally tinged and streaked with blood; catamenia returned.

Cont. med.

March 3.—Cough very troublesome.

Ap. pect. Emplast. picis C. Cont. med.

April 14.—Cough severe.

Ap. pect. Emplast. cantharid. Cont. med.

June 15.—Continues in precarious state; catamenia appear occasionally, but not regularly; has had antimonial plasters applied on chest twice, to check violence of cough; has continued the iron pill without intermission, feeling much "support" from it—to use her own words.

July 7.—Cough much relieved, but returns on lying down at night; P. 88; AP. good; catamenia regular.

Rep. Emplast. antimon., mitius, et Pil. ferri.

Sept. 8.—Cough still troublesome, but kept under, apparently by plaster.

Dec. 30.—Has kept on the plaster, and has taken the iron regularly up to present time; cough nearly gone; catamenia regular.

In 1851 continued to improve in health, and eventually became quite well; married, and had a family. Saw her occasionally for six years after. She fully expected to fall into consumption, and ascribed her safety to the treatment pursued; in which opinion, I need hardly say, I quite concur.

CASE III.

Richard ———, æt. 48, constable.—*Oct.* 14, 1853.—Has been in the police force thirteen years.

Ordinary conformation; had good health until five months ago, when he was attacked by cough and pain in chest; cough severe at present, and breathing oppressed; great debility and emaciation, especially in thorax; AP. bad; B. regular; U. dark; P. 92; occasional pain in side.

On right side, respiratory sounds rough, and chest emits hollow sound on percussion; on the left, altogether the reverse, a general dulness pervades the whole region.

> Ap. pect. sinistro lateri, Emplast. antimon. 8 × 6.
> ℞. Acid. sulph. dil. ʒiij., magnes. sulphatis ℥iss., aquæ ℥xvj. M. ℥j. ter quotidie sum.
> Full diet, at discretion.

Oct. 21.—Plaster has not had much effect; symptoms much the same; P. 100.

> ℞. Acid. sulph. dil. ♏ x., inf. gentian. C. ℥iss. M. Ter quotidie sum.
> Full diet.

Oct. 24.—No improvement; cough continues, P. 82; plaster removed and replaced by a stronger one.

> Rep. med.

Nov. 4.—Considerable effect from plaster; feels much better in every respect. Plaster removed.

> Cont. med. and diet.

Nov. 11.—Cough much subsided.

> Cont. med. and diet.

Nov. 14.—Cough not entirely gone; P. 84.

> Ap. pect. Emplast. antimon., mitius, 8 × 4. Cont. med., &c.

Nov. 25.—Improving.

> Cont. med., &c.

Nov. 28.—Attack of roseola, on face especially; pectoral symptoms all improved.

Jan. 1854.—Cough rather increased in December; had another plaster; has gone on improving and gaining flesh up to present time; P. 80. Went on night duty last night for first time since illness.

Jan. 13.—Cough threatening, applied for another plaster.

Cont. med.

Jan. 23.—Still on duty, but very weak. Lost sight of him from this time.

This case shows that the symptoms, which I considered were those of incipient consumption, were manifestly under the control of the remedies; but from the man's necessity to be at his duty, these could not be said to have had fair play.

CASE IV.

HENRY BLACKER, æt. 22, butcher.—*Sept.* 7, 1849.—Complains of severe cough, accompanied by purulent expectoration, streaked with blood, of several weeks' standing; great emaciation; extreme debility; breathing short; voice hollow; skin clammy; P. 120; AP. ordinary; perspirations profuse by night. Attributes his illness to frequently getting wet in his business. On percussion, chest sounded well, though less resonance on the right than on the left side. To the ear, respiratory sounds puerile, with some mucous rattle; impulse of heart great, felt over whole chest; B. regular; U. high-colored. Apprehensive as to his fate.

Ung. Ant. tart. pectori, mane ac vespere, quotidie infricandum.
℞. Ext. conii ʒss., oxymellis ℥ij., aquæ ℥x. M. ℥ss. tusse urgente sumenda. Full diet.

At expiration of a week, numerous pustules on chest, of large size; cough less; P. slower.

Poultice to be applied on chest during night, and ointment, spread on cloth, during day.

Sept. 30.—Has continued ointment to present time; great discharge from pustules; P. 90; cough nearly gone.

Oct. 19.—Cough gradually subsiding; all other symptoms diminished; sleeps well; gaining flesh and strength; says he feels well.

Omit ung.

This man continued to improve, and became really well. He was full of anxiety lest he should die of decline. Had the expectorant medicine at his own request, and persevered with the ointment most industriously—more so than I could have expected. He took animal food in large quantity. He had lost near relatives by consumption, but I could not learn whom.

CASE V.

Miss E. C., æt. 18.—*Feb.*, 1852.—Of ordinary conformation; of sedentary, studious habits; spirits generally depressed; tendency to emaciation and general debility. Has had cough for two months without having complained of the same. Her father died three months ago of bronchitis: she had attended on him closely and anxiously during his illness, of several months' duration, and her grief at his death was excessive. Has, at present, cough with much expectoration, both tinged and streaked with blood; respiration accelerated; no pain in chest or elsewhere;

P. 96 ; features shrunk, pallid, and anxious ; B. slow ; U. natural ; catamenia scanty ; AP. bad.

On percussion, right subclavicular region very dull ; left, natural. Through stethoscope, scarcely any respiratory sound heard on right side, but puerile on left.

Antimonial plasters were applied in succession, till copious purulent discharge was obtained ; some sloughs followed of considerable size. Took gentian and acid thrice a day unremittingly till end of July, when the cough began, for the first time, to subside. The expectoration all the summer had been streaked with blood. P. remained quick. Two physicians of eminence saw her, not together : the former thought she could not recover ; the latter was rather more sanguine.

She left London for change of air, and remained in the country until October, all the time taking Pil. ferri C. thrice daily. On her return, she was somewhat better, though the P. remained unaltered.

Oct. 21.—Coughs occasionally, but dyspnœa oppressive ; feels stronger and better generally. After three weeks, went again to country, taking with her, at her own request, an antimonial plaster. This she cut in half, applying a portion on the right side of the chest, feeling assured "the mischief lay there." After a time, she applied the second portion, on the same spot, each time deriving much benefit from the application.

She continued taking the gentian and acid, as well as the iron pill, omitting them for a week or two, and resuming them at her own discretion.

She became quite well, and remained so for some years,—her friends and medical attendants all being of opinion that she had been rescued from consumption.

The sequel of this case is instructive. Several years after this period she married, repaired to South America, and there, as though it were her destiny, she died of consumption.

This case is referred to at page 57, as arising from mental depression.

CASE VI.

Miss W. M., æt. 15.—*Dec.* 8, 1848.—Of delicate conformation; rather short for her age; pale complexion, with hectic patches on cheeks; AP. bad; great debility; catamenia not yet appeared; P. 80; U. high-colored; B. slow. Her father, and two, if not three, sisters, had died of consumption. Complains of short, troublesome cough, accompanied by slight mucous expectoration; much palpitation, and profuse night perspiration. Though very thin, the chest emits very dull sound on percussion: the respiration is very imperfectly heard through the stethoscope.

Ap. pect. Emplast. antimon., mitius.

She was ordered to take ten drops of dilute sulphuric acid, and one of dilute hydrocianic, in water, three or four times a day. Full diet.

Dec. 15.—Considerable eruption from the plaster; cough and other symptoms better.

Plaster left on. Cont. med. and diet.

Dec. 20.—Cough entirely gone; no night perspirations; eruption on chest very full.

Plaster to be removed. Omit med.
To take the dilute sulph. acid in infusion of orange-peel.

Jan. 15, 1849.—Has felt *well* the last week or fortnight, taking her tonic medicine regularly.

Omit med. To take nourishing diet and walking exercise very regularly.

She continued well for two years, requiring during that period no medical attendance whatever.

Feb. 12, 1851.—Attacked by cough, with expectoration streaked with blood; much hectic flush on face; P. 90; AP. very bad; great debility. Train of symptoms very similar to those noticed two years ago; respiratory sound very weak; has grown somewhat taller, but is still short for her age.

Ap. pect. Emplast. antimon., mitius.
To take fifteen drops dilute sulph. acid in water thrice a day.

March 1.—Cough subsided as eruption rose under the plaster; feels somewhat better in other respects.

Plaster to be removed. To take infusion of gentian and acid thrice a day.
Full diet at discretion.

April, May, June.—Continued her medecine; all morbid symptoms gradually subsiding.

June.—Quite well. Went to boarding-school in the country.

Sept.—Her brother, aged about 22, died of pulmonary disease in south of France.

Dec. 14.—Has had occasional attacks of cold and cough, at school, since June. Complains at present of cough, severe dyspnœa, much palpitation, and great debility.

The right side of the chest, where the impulse of the heart is most felt, is perceptibly larger than the left. By stethoscope, considerable hypertrophy detected, accompanied by bellows sound.

Catamenia have not yet appeared.

Ap. pect. superiori regioni Emplast. antimon.
℞. Pil. ferri C. x. gr., divid. in pil. ij.; bis die sumend.
℞. Acid. sulph. dil. ʒj., syr. tolu ℥ij. M. ʒj. tusse urgente sum.

Dec. 20.—Cough and palpitation much relieved.

Cont. med.

Jan. 31, 1852.—Convalescent. From this time she improved in health and strength, and so remained. She took the iron pill for a considerable time, of her own accord, deriving great benefit therefrom.

I consider this a clear case of prevention, as did she herself, her relations and friends.

CASE VII.

Miss S. A., æt. 25.—*Dec.* 23, 1850.—Of ordinary conformation; healthy complexion; has been much engaged in writing at the table, and in visiting the poor. Has become much thinner during last twelve months; has been subject to cough in winter for last three years; has not lost near relatives by consumption.

P. 84; T. clean; AP. variable; B. slow; suffering at present from cough, accompanied by pain and tightness over chest, night and morning especially; expectoration free and copious, consisting almost entirely of dark-colored blood, mixed with frothy mucus.

Catamenia regular, but painful.

Respiratory sound very dull below left clavicle, over considerable space; pain increased on coughing, and on pressure of stethoscope.

℞. Acid. sulph. dil. ʒij., syr. aurant. ℥ij. M. ʒj, hæmoptyse, vel tusse urgente, sum.
Ol. ricini ʒij. pro re nata sum.
Ung. antimon. tart. pectoris superiori parti, mane ac vespere infricandum.
Ap. pect. inferiori Emp. picis C.
To take nutritious, but not stimulating food.

Dec. 30.—Some eruption from ointment; cough and expectoration of blood continue.

Rep. omnia.

Jan. 7, 1851.—Eruption more abundant; expectoration continues, though cough less; considerable lassitude; AP. very defective; P. 84—weak.

℞. Pil. ferri C. gr. x., in pil. ij.; bis quotidie sumend.
Cont. unguent., oleum, et syrup.

Jan. 14.—Eruption full; cough remains same; expectoration continues; lassitude; B. constipated.

Omit Pil. ferri et unguent.
Pil. aper. ij. (coloc. and pil. hyd.) hora somni pro re nata sumendæ.
Cont. med. alia.

Jan. 21.—Eruption continues full; cough much diminished; blood in sputa much less; AP. improved; B. regular.

Cont. med.

Jan. 23.—Cough entirely gone; little or no blood noticed in sputa; feels better in every respect.

Rep. med.

Jan. 26.—Cough returns at intervals; some blood seen in sputa occasionally, now, however, *light*-colored, not dark, as before—about ℥j. of mucus, mingled with a little blood, expectorated at once.

Rep. Ung. ant. tart. et syrup. expect.

Feb. 1.—Cough again subsided; still some blood in expectoration; AP. improved, but strength fails; P. 84; catamenia regular; respiratory sound clear on right side, very dull on left.

Ap. pect. lateri sinistro Emp. canth.

℞. Acet. plumbi gr. ij., micæ panis q. s. s. ft. pil.; bis quotidie sumend.

℞. Acet. dist. ʒj., syr. aurant. ʒj., aquæ ℥j. M. Ft. haust. cum pil. sumend.

Feb. 6.—Cough gone; very little blood visible in sputa; occasional cholic pains.

Cont. med. omnia.

Feb. 8.—Cholic pains severe; discontinued the lead of her own accord. To-day blood reappeared in sputa; respiratory sounds remain unchanged; great debility.

Omit Pil. plumbi.

℞. Tinct. ferri hydrochlo. xv. m., aquæ ℥j. M. Ft. haust. bis quotidie sumend.

Pil. aper. vel ol. ricini, pro re nata sum.

Feb. 13.—Blood appears in sputa occasionally; respiratory sounds audible and distinct on both sides of the chest; some stupor, and considerable flushing of face; P. 94, wiry.

℞. Inf. rosæ C. ℥iss., magnes. sulphatis ʒj., acid. sulph. dil. x. m. M. Ft. haust. 5tis. q.q. horis sumend.

Feb. 15.—Stupor continues; headache, and throbbing of temples; no blood in sputa; cough nearly gone; has been confined to bed the last fourteen days.

Habeat statim pediluvium cum sinapi, lotio frigid. temporibus assidue applicand.
Cont. med. ros.

March 1.—Gradually improving; feels better in every respect; went out of town; remained well.

No tubercular diathesis was present in this case; but the tendency to hæmorrhage from the bronchi was so great that much apprehension was felt lest ulceration should take place, and consumption supervene; for there was no appetite, but a perpetual exhausting debility.

The treatment and the issue were satisfactory.

CASE VIII.

JAMES TAYLOR, stonemason, æt. 42.—*Feb.* 4, 1850.—Complains of severe cough, accompanied by copious purulent expectoration; profuse perspiration; great emaciation; extreme debility; voice hollow; P. 100; B. confined; AP. ordinary; respiratory sounds dull, no rattle. His work consists in polishing marble, generally wet, seldom dusty.

Ap. pect. Emp. picis C.
℞. Ox. scillæ ℥ij., antimon. tart. gr. ij., tinct. hyoscyam. ʒiij., aquæ ad ℥xvj. M. ℥j. tusse urgente sum.
Ol. ricini ℥j. pro re nata sum. Full diet.

Feb. 11.—Symptoms same; emaciation increasing.

Ap. pect. Ung. ant. tart. mane ac vespere.
Rep. med.

Feb. 15.—Cough rather better; P. 104.

Cont. med.

Feb. 18.—Great effect from ointment, profuse puruleut discharge; cough greatly subsided; P. 120; unwilling to have ointment repeated on chest; consented to its being applied on the posterior walls of chest.

Feb. 28.—Cough nearly gone; some discharge from anterior, much from posterior, surface of chest; P. 90.

Rep. med.
Cerat. cetacei pect. applicand.
Ung. ant. tart. dorso repetend.

March 7.—Cough entirely gone; feels stronger and better; relishes his food greatly.

Cont. ung. dorso om. nocte.
Omit med. alia.

March 14.—Gaining strength, but liable to profuse perspirations at night; B. confined; P. 80; desirous of resuming his work.

℞. Acid. sulph. dil. ʒij., ferri sulphatis ʒj., aquæ ℥xvj. M. ℥j. 5tis. q. q. horis sumenda.
Ol. ricini pro re nata sum.

March 17.—Much improved in every respect, except that B. confined.

Habeat subinde Pil. aper. coloc. et pil. hydrarg.
℞. Inf. gentian. C. et aquæ aa. ℥x., acid. sulph. dil. ʒij. M. Ut antea sum.

April 14.—Feels pretty well, but weak; no morbid symptoms observable.

℞. Acid. sulph. dil. ʒj., quinæ disulph. gr. x., aquæ ℥xx. M. ℥j. ter quotidie sumend. Has been advised full diet throughout.

April 28.—Has caught cold, and experienced return of many unpleasant symptoms; P. 100.

Ap. pect. Emp. antimon. mitius amplum.
R. Acid. sulph. dil. ʒij., magnes. sulph. ℥ss., inf. gentian. C. et aquæ aa ℥vj., M. ℥j. 4tis. q. q. horis sumenda. Full diet.

May 5.—No eruption from plaster; cough increased—severe; P. 100.

Cont. med.

May 16.—Abundant eruption under plaster; cough much diminished; P. 100.

Plaster to remain on. Cont. med.

June 6.—Cough nearly gone; P. 100; feels much better, but weak.

Plaster to be removed. Ap. pect. Ung. calamin. Cont. med.

June 16.—Cough entirely gone.

Cont. Ung. calam. et med. tonic.

Has taken full diet all along, as far as he felt disposed—viz., meat at dinner, milk and bread night and morning.

Felt quite well; removed to the country.

CASE IX.

George Gane, æt. 27, printer.—*Sept.* 19, 1852.—Pale, slender, feeble, and irritable; has been five months suffering from slight cough and oppressed respiration; has been in the west of England the last five weeks, for the benefit of his health; coughs principally mornings and evenings; little or no expectoration; breathing laborious; P. 100; T. clean; B. regular; U. natural; AP. bad. Chest sounds well, and respiratory sounds clear and distinct,—tending to puerile, and rather rough; no other morbid sound; spirits low; anxious to resume his work at printing.

Ap. pect. Emp. antimon.

℞. Acid. sulph. dil. xv. m., syr. aurant. ʒij., aquæ ʒvj. M. ft. haust. 5tis. q. q. horis sumendus. Full diet.

Sept. 24.—Plaster caused much pain; had produced numerous small vesicles, principally over sternum; cough less.

Cont. med. Plaster removed at own request.

Sept. 26.—Consented to another plaster being applied, higher than former, close under clavicles only.

Cont. med.

Sept. 30.—Plaster again caused much pain, and also ulceration of surface ; much purulent discharge ; cough much diminished ; sweats by night ; U. high-colored ; P. 100.

Oct. 3.—Cough less ; much discharge from surface of chest ; feverish and extremely irritable. Dr.—— called in in consultation.

Effervescing saline draught advised.

Oct. 8.—Febrile symptoms subsided ; still much discharge from ulcerations on chest ; cough nearly gone ; P. 100 ; skin dry ; no perspiration either by day or night ; AP. bad.

Nov. 4.—Ulcerations on surface remain open, discharging freely.

Ap. Ung. calamin. pect.
Rep. med. salin. et syr. c. acid.

Nov. 20.—Since last report, nearly all morbid symptoms increased. He was dissatisfied, and I ceased to attend him ; he died the last week in December.

In this case, although the counter-irritant was, as usual, effectual in checking the more urgent symptoms, the strength of the patient was not equal to the remedy. It was an unfortunate case throughout ; one of the chief difficulties was, the highly-irritable temperament, which resisted every remedy that caused uneasiness in its action ; and as there was little or no hope evinced by the sufferer, there was no faith, whatever course of treatment was recommended.

CASE X.

JOHN DILLESTON, æt. 21, cabinet-maker.—*July* 25, 1852.—Was taken ill in August, 1850. Ruptured a blood-vessel while eating his dinner; lost three quarters of a pint of blood; was bled at the time and took medicine; has had cough and tightness of breathing ever since. Suffers at present from incessant cough, great weakness, and sleepless nights; AP. natural; B. slow; T. clean; P. 116; perspires profusely in first part of night and towards morning; complains of but little fever or thirst; expectoration muco-purulent, streaked with blood; countenance pale; great emaciation; voice weak and hollow. Parents alive; lost a sister from croup, and two aunts and one uncle from consumption; respirations 28; respiratory sound puerile over left subclavicular region, but inaudible on right side; impulse of heart very strongly heard and felt over chest, which is somewhat larger on the right than on the left side.

> Ap. pect. Emplast. antimon., amplum.
> R. Acid. sulph. dil. x. m., syr. simpl. ʒj. M. Tusse urgente et ter quotidie sum.
> Pil. rhei C. gr. x. hora sum. pro re nata sum.
> Full diet of mutton and milk and bread.

July 28.—Cough less; expectoration remains copious, but without blood; less perspiration; P. 120—small; respirations 21; AP. increased; B. regular.

> Rep. omnia.

Aug. 1.—Great irritation from plaster, with abundant discharge from pustules; cough much abated; some blood in sputa one day; restless nights, and perspirations still troublesome; AP. good; voice very weak and hollow; B. slow; T. furred; P. 140—soft; hectic flush daily p.m. for about five hours; very pale and anxious countenance.

> Ap. pect. Cataplasma simplex.

Rep. syr. and acid.
Ol. ricini, pro re nata sum.

Aug. 4.—Irritation on chest subsided; much discharge from pustules; several sloughs, the size of fourpenny-pieces; cough more troublesome; emaciation increasing; AP. good; B. regular; P. 128; hectic subsided; T. slightly furred; some sickness.

Rep. med. and diet.

Aug. 8.—Sloughs disappeared; discharge continues copious; cough much better; expectoration very yellow, inclining to green; no blood; feels stronger and better in every respect.

Aug. 11.—Cough declining; discharge from surface copious; expectoration much less—muco-purulent in character; T. clean; P. 120; B. regular; AP. good; no sweating; good nights; feels stronger daily, and thinks he is gaining flesh; complexion still pale and anxious.

Cont. med. and diet.

Aug. 15.—Cough still less; discharge from surface declining—nearly ceased; expectoration continues; T. clean; P. 104; B. regular; taking oil occasionally; sleeps well; voice hollow.

Rep. med. and diet.
Ap. Emplast. antimon., mitius parvum.

Aug. 25.—Cough nearly gone; feels better in every respect; sleeps well; P. 120; some discharge from surface.

℞. Acid. sulph. dil. ʒij., ferri sulph. ʒij., aquæ ℥xij. M. ℥j. ter quotidie sum.
Rep. oleum. Plaster remaining on.

Going to Suffolk for benefit of his health.

Oct. 6.—Has been four weeks in the country; coughed very little while there; has had cough since he returned to London; P. 120.

To have a stronger plaster, and to continue tonic medicine.

He went back to the country, and I lost sight of him. I never knew the result of his illness.

This case showed very plainly, I consider, the efficacy of the plaster in arresting the progress of the disease. He was a strong young man, and bore the pain of the application cheerfully, always acknowledging that he derived benefit from it. I much regretted losing all trace of him.

FINIS.

WELLCOME LIBRARY INSTITUTE

LONDON: PRINTED BY ROBERT HARDWICKE, 192, PICCADILLY.